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To identify present and emerging farm occupations and necessary competencies, personal interviews were conducted by teachers of agriculture with a random sample of 329 farm operators in 11 selected counties in Kentucky. Slightly more than 75 percent of the operators interviewed were owners living on a farm. Some population characteristics were: (1) 49.2 percent of the operators managed 151 to 300 acres. (2) The median turnover of operator-owners was 20 years, and (3) 18 percent of the operators eompleted some education beyond high school and 8 percent completed 4 years of college. The relative importance of competencies was determined in the six subject matter areas of (1) animal science, (2) plant science, (3) farm business management and marketing, (4) agricultural mechanics, (5) farmstead buildings, fences, and water systems, and (6) soil and soil management. The most important areas of agricultural knowledge for farm operators and foremen were agricultural mechanics, and soil and soil management. The livestock herdsmen ranked animal science and agricultural mechanics as important areas of knowledge. (DM)

# EMPLOYMENT OPPORTUNITIES AND COMPETENCIES TEDED IN FARM OCCUPATIONS I

# NEEDED IN FARM OCCUPATIONS IN SELECTED COUNTIES IN

## **KENTUCKY**

VOCATIONAL EDUCATIONAL RESEARCH



March 1968

Department of Education Frankfort, Kentucky 40601

### U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE OFFICE OF EDUCATION

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EMPLOYMENT OPPORTUNITIES AND COMPETENCIES NEEDED IN FARM OCCUPATIONS IN SELECTED COUNTIES IN KENTUCKY,

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State Department of Education
Frankfort, Kentucky

In Cooperation With

Kentucky Research Coordinating Unit
Division of Vocational Education
College of Education
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March, 1968



#### PREFACE

This study identifies farm occupations and competencies for these occupations in an 11-county area. Data provided indicates employment opportunities and agricultural competencies needed by farm workers in present and emerging occupations in the selected Kentucky counties. Descriptive and background data will provide basic information from which course content for curriculum construction in farmer education may be determined.

Information for this study was secured by 13 vocational agriculture teachers in 11 counties from 329 farm operators. There are 3,810 farms in the population. The farms selected for this study were those above the 1964 average acreage size.

The agriculture subject matter areas include plant science, animal science, farm business management and marketing, agricultural mechanics, farmstead, building, fences and water systems, and soil and soil management. Knowledges, skills, and tools used were determined for each subject matter area. The competencies were recorded from the farm operators' reactions to indicate the degree of importance on a scale of necessary, desirable, and not necessary. Competencies for effective work are identified.





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The study was a cooperative effort of staff members in the Kentucky Department of Education, Division of Vocational Agricultural Education, Vocational Agriculture teachers in the selected counties, and members of the staff of the Kentucky Research Coordinating Unit, College of Education, University of Kentucky, Lexington, Kentucky.

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#### CHAPTER I

#### INTRODUCTION

The performance of American agriculture has been outstanding.

Farmers have helped make it possible for consumers to spend approximately 18 per cent of their income for food, the smallest proportion in any country.

The American-style technology applied to a mass scale around the world can provide food for the growth ahead. Recent projections of six billion people within 30 years have raised few fears.

Farm managers and other farm employees must be knowledgeable of the competencies necessary to successfully operate farm businesses. The extension specialists in agriculture economics project that the investments in farm business by 1975 in large farms with gross sales in excess of \$10,000.00 annually will be \$175,000.00. Farm managers must excel in farm business management and marketing. The farm production expenses make up more than 60 per cent of the gross income of the larger farm business. Approximately one-third of the most successful farmers market an estimated 82 per cent of the total output. This indicates a definite need for effective training of persons who will be the managers and other employees of the farm business in the future.

A look ahead at the next 10 years points the way to continued

rapid growth in farm size, capital investment, and productivity. The U.S. population increase to more than 235 million by 1980, and the increased foreign demand for foods and fiber directs our attention to the need for adequately trained farm employees.

The operators, managers, foremen, livestock herdsman, specialty crop producers, operators of farm machinery and equipment, and the general farm workers need to have the opportunity to keep abreast of competencies necessary to perform effectively in their occupations.

Competent persons trained are needed to meet the domestic and foreign demands for food and fiber.

#### **Problem**

The problem in this study was to determine the employment opportunities and agricultural competencies needed by farm employees in present and emerging farm occupations in selected counties in Kentucky.

A course of instruction may be developed from these findings to meet the demands of each employee or to determine competencies that are pertinent to an occupation.

#### <u>Objective</u>

The objective of the study was to secure, by personal interview with the farm operators in the selected counties, information that will identify the present and emerging farm occupations and competencies for each occupation.



#### Definition of Terms

- Agriculture -- the term used to include farming and off-farm agricultural businesses.
- Competencies -- characteristics and qualities which enable an individual to accomplish specific tasks.
- Farm -- a unit of land that is operated as a unit and is designated as a farm in the county deed book. For this study farms that are above the 1964 U.S. Census of Agriculture mean acreage size for each county were included in the population.
- Farm Occupations -- the job titles or farm occupations are operatornot owner, operator-owner, foreman, livestock herdsman, tobacco
  producer, agricultural mechanic, other crop producer, and general
  farm worker.
- Farm Unit -- includes one or more farms that are managed by one operator.
- Knowledge -- the understanding that is desirable for an employee to be effective in an occupation. This may be acquired from an authority, from personal experience, deductive reasoning, inductive reasoning, or in the scientific problem solving method.
- Off-Farm Agricultural Business -- a business other than farming, ranching, or other production agriculture which needs one or more workers with significant knowledge, abilities, and/or skills in one or more of the primary areas of plant science, animal science, soil science,

ERIC

or agricultural mechanics. The business is an agricultural business when the product(s) handled or service(s) provided is in the form in which it appears on the farm, ranch, or other production agricultural unit. This is the definition of an off-farm agricultural business study that is presently being conducted in Kentucky.

- On-Farm -- is related to production agriculture and includes six subject matter areas animal science; plant science; farm business management and marketing; agricultural mechanics; farmstead, buildings, fences, and water systems; and soil and soil management.
- Operator -- the employer that is responsible for the farm business operation.
- Population -- the population for this report includes the farms in the selected counties that are above the 1964 mean acreage size. The 1964 U.S. Census of Agriculture was the source of information used to determine the 1964 mean farm acreage size.
- <u>Sample</u> -- thirteen per cent of the farms in each county were selected randomly.
- Skills -- abilities acquired by observation, study, or experience in mental and/or physical performance basic to the mastery of work or activity.
- Subject Matter Areas -- in this study they are animal science, plant science; farm business management and marketing; agricultural mechanics; farmstead, buildings, fences, and water system; and soil and soil management.

Tools Used -- the tools identified by farm operators that are necessary for performing occupational skills satisfactorily.

#### Basic Assumptions

#### Assumption I:

Farm operator can give an adequate description of competencies needed by the farm employees who are under his supervision.

#### Assumption II:

The list of competencies in the questionnaire that was determined after consultations with specialists at the University of Kentucky Colleges of Agricultural Education and Agriculture, and reviewed by farm management specialists, includes the essential knowledge and skills of farm employees.

#### Assumption III:

The summarization of data, relating to competencies, will indicate the major subject matter areas for instruction and will provide a more comprehensive list of knowledges, skills, and tools used.

#### Assumption IV:

That the sample is representative of the farm population, farm operators, and farm employees of farms that are above the mean acreage in each county.



#### Related Research and Background Information

A review of publications from the University of Kentucky, College of Agriculture, that are related to the problem of this study does not provide data on occupations and competencies of farm employees.

The summaries of <u>Studies in Agricultural Education</u><sup>1</sup> was reviewed and supported the conclusion that these studies are not designed to assist in determining the farm occupations and occurational competencies of employees on the farms that are corporated in this study.

Research reports and other sources of information were reviewed and the conclusion is that data needed to assist in the solving of the problem of this study is not available. A large number of studies to determine the occupations and competencies in off-farm agricultural occupations are under way in many states to meet this need in vocational agriculture. The information needed for an on-farm occupation study for this area is not available.



<sup>&</sup>lt;sup>1</sup>U. S. Department of Health, Education, and Welfare, <u>Summaries of Studies in Agricultural Education</u>, (Supplement No. 16; Washington, D. C.: Superintendent of Documents, U. S. Government Printing Office, 1965).

#### CHAPTER II

#### PROCEDURE FOR CONDUCTING THE STUDY

#### General Design

The farms in the selected counties with acreages above the county mean that is reported in the 1964 U. S. Census of Agriculture average were secured by the teachers of agriculture in the respective counties from either a county tax commissioner's office's county Farm Bureau information list, or an Agricultural Stabilization and Conservation Service Office. The teachers of agriculture forwarded to the project director a list of the farms for each county and included the name of the owner of the farm, the acres in the farm, and the location of the farm. A 13 per cent random sample was taken. The farms designated by this sampling method were listed and given a project number. This list was returned to the interviewers with the name of the owner of the farm, the number of the farm, and the address of the owner of the farm.

The general methodology for this study was a field survey procedure. The interviewers were teachers of agriculture in the respective counties. Approximately two weeks before they made their first interviews, the group received instructions on techniques and procedures for making effective interviews. At this time the purpose of the study, the value of the study, and a detailed explanation of the questionnaire





was made. At the conclusion of this session for the interviewers, they were instructed to select two farm operators from the list provided and make the interviews. After making the two interviews, they forwarded their questionnaires to the project director. He reviewed the two questionnaires and returned them with suggestions on improving the recording of the information and on the use of the questionnaire. The recording data and the techniques used by the interviewers as described was an aid to standardizing the interviewing.

#### Population and Sample

Kentucky is divided into nine vocational agriculture districts. The West Kentucky District was selected by the staff in Agricultural Education. The primary reason that this district was selected is that it is an area of the state that makes a major contribution to the production of food and fiber and is representative of the farming in the state. The population of this study included the farms in the selected counties that are above the mean acreage size. The mean acreage size for each county was secured from the 1964 U. S. Census of Agriculture preliminary report. A list of the farms with acreages above the mean for the county were secured from either a county tax commissioner's office, a county Farm Bureau information list, or the Agricultural Stabilization and Conservation Service office.

The interviewers forwarded this list of farms to the project director. Samples were selected using a randomly assorted digits table and



returned to the interviewers. This insured a representive sample. The number of farms in the population for the study is 3,810. The number of farms in the sample was 517. This was a 13 per cent sample.

#### Instrument

The instrument used in this study is presented in Exhibit A. Schedule A of this instrument was used to secure information of the farm, the farm operator, and the employees on the farm. Schedule B is designed to secure from the operator of the farm or farms pertinent data in each of the six subject matter areas. This portion of the instrument is designed to provide the interviewer the space to record the operators' relevant importance of each competency. The farm operators interviewed were given an opportunity to indicate the importance of each competency using the scale of necessary, desirable, and not necessary.

#### Data Collection

The interviewers forwarded the questionnaires to the project director soon after completing the interview. Each questionnaire was reviewed and appropriate code numbers were added for effective card punching. The cards were punched in the Kentucky Department of Education, Computer Service Division for data summarization. The summarization was completed by the Computer Service Division, University of Kentucky. Data from Schedule A was recorded in appropriate form for summarization. The information from Schedule B was used to calculate the relative importance scores. The relative importance



scores were recorded graphically for interpretation.

The data for this study was secured by teachers of agriculture, summarized by the project director, and are reported in this summary. The data is recorded in tables and figures for convenience.



#### CHAPTER III

#### DESCRIPTIVE AND BACKGROUND DATA

The data presented in this chapter in Tables 1, 2, 3, 7, and 8 is from the 1964 U.S. Census of Agriculture for the 11 counties and therefore present the total population. Information in the remaining tables is data from the sample taken from the 11-county area. To extrapolate these sample tables to the farm population for the 11 counties a factor of 7.3 should be multiplied times the data for the sample presented.

An analysis of data in the 1964 U. S. Census of Agriculture reveals that the farms in this 11-county area range in average size from 125 to 303 acres and 1,982 of the 7,620 commercial farms are grouped in the Economic Classes I, II, and III. There are 3,810 farms included in the population of this study. A 13 per cent sample identified 517 farms.

The 329 farm operators interviewed manage from one to ten farms each, and 56 per cent operate more than one farm. Seventy-five per cent of operators interviewed are operator-owner living on the farm.

The operators' ages range from 20 to 88, and 34 per cent have completed high school. Their occupational experience in farming indicates many years of on-the-job experience.

There are 693 employees in the 517 farms. The largest percentage is 64.1 per cent as operator. Small numbers were employed in



the other occupational areas except in the general farm worker group.

Other information in the data available on employees is job turnover and formal education needed.

#### Farms in the Eleven-County Area

Table 1 represents 2,108,945 acres of farm land in the area and \$79,456,749 is the value of farm products sold. The range of the average size of farm is 125.5 acres to 303.9 cres. Farms included in this study are above the mean acreage size for each county. The largest dollar value of farm products sold per farm is \$15,308 and the lowest is \$2,924. This indicates a wide range in types of farm businesses.

FARM ACREAGE, AVERAGE SIZE OF FARM
AND VALUE OF FARM PRODUCTS SOLD IN
THE ELEVEN-COUNTY AREA<sup>a</sup>

Country	Acres	Average Size	Farm Products Sold		
County	in Farms	of Farm	All	Per Farm	
Caldwell Christian Crittenden Daviess Henderson Hopkins McLean Muhlenberg Todd Union Webster	155,311 339,466 150,410 245,036 241,642 189,326 128,014 140,684 198,183 172,607 148,266	164.5 205.4 199.2 125.5 212.9 176.8 146.8 143.7 190.7 303.9 183.5	\$4,102,434 13,631,203 2,207,941 15,483,933 10,328,150 4,596,348 5,019,533 3,061,867 7,961,967 8,695,018 4,368,355	\$4,5.6 8,246 2,924 7,932 9,100 4,292 5,756 3,128 7,663 15,308 5,406	
Totals	2,108,945		\$79,456,749		

<sup>&</sup>lt;sup>a</sup>U. S. Bureau of the Census and U. S. Department of Commerce, 1964 U. S. Census of Agriculture Preliminary Report, (Washington, D. C., 1966), p. 2.



Table 2 indicates 276 farms with sales of \$40,000 or more. Seven per cent are Class II farms with sales of \$20,000 to \$39,999. There are 172 Class III farms with sales of \$10,000 to \$19,999 and the percentage is twenty-three in Class IV with sales of \$5,000 to \$9,999.

TABLE 2
ECONOMIC CLASSES OF FARMS IN THE ELEVEN-COUNTY AREA<sup>a</sup>

County	Total Commercial	Fari	ns by		ic Cla	•	-
	Farms	I	II	III	IV	V	VΙ
Caldwell	5.85	5	169	63	137	209	155
Christian	1,249	46	117	206	324	347	209
Crittenden	385	1	9	34	80	113	148
Daviess	1,260	52	100	192	295	398	223
Henderson	884	54	151	169	197	185	88
Hopkins	566	11	27	76	130	137	185
McLean	617	10	3 <b>2</b>	79	184	201	111
Muhlenberg	521	3	15	45	88	177	193
Todd	770	25	75	117	161	241	151
Union	435	60	69	113	95	62	36
Webster	511	9	30	78	153	142	99
Totals	7,743	276	641	1,172	1,844	2,212	1,598

albid., p. 2.

Table 3 indicates 34.7 per cent of total acres are in acres of cropland harvested and 21.7 per cent used for pasture; therefore, 43.6 percent is used for other crops that are less productive.



TABLE 3

LAND AND FARMS BY USE OF FARMS IN THE ELEVEN-COUNTY AREA<sup>a</sup>

County	Acres in Farms	Acres Cropland Harvested	Acres: Used Only for Pasture
Caldwell Christian Crittenden Daviess Henderson Hopkins	155,311 339,466 150,410 245,036 241,624 189,326	34,709 103,900 28,492 109,895 107,543 56,726 59,508	50,343 90,236 42,172 48,984 58,412 23,399 13,275
McLean Muhlenberg Todd Union Webster Totals	128,014 140,684 198,183 172,607 148,266 2,108,927	37,595 66,003 76,935 51,109 732,415	26,232 41,590 34,617 29,270 458,530

a<u>Ibid.</u>, p. 2.

As shown in Table 4, the total number of farms in the area that are above the mean acreage for each county is 3,810. The total number of commercial farms in the eleven-county area is 7,620. Thirty-four per cent of the land in this area is classified as harvested cropland.

The number of farms in the population is 3,810, and a 13 per cent random sample identified 517 of those farms for this study. A farm unit is one or more farms under the management of one operator. There are 329 farm units in the 517 farms in the sample.



TABLE 4
FARMS IN THE ON-FARM STUDY IN THE ELEVEN-COUNTY AREA

Item	Number
Number farms above average size (population)	3,810
Number farms in sample	517
Number farm units in sample	329

The largest number of farm operators interviewed as is shown in Table 5 operate one farm; however, 26.7 per cent operate two farms and 11 per cent operate three farms. Nineteen per cent are operating more than three farms.

TABLE 5
PER CENT OF THE FARMS IN EACH UNIT

Size of Unit	Per Cent
One farm	42.8
Two farms	26.7
Three farms	11.0
Four farms	06.2
Five farms	04.8
Six farms	02.3
Seven farms	02.7
Eight farms	.013
Ten farms	.019

As recorded in Table 6, 49.2 per cent of the operators manage 151 to 300 acres. Less than .6 per cent of the operators manage units smaller than 100 acres. Four per cent of the operators manage units over 1,000 acres.



TABLE 6
SIZE OF THE FARM UNITS IN ACRES

	Number of House
_	Number of Farms
Acres	in this Range
50-100	2
101-150	16
151-200	50
201-250	58
251-300	54
301-350	30
351-400	20
401-450	17
451-500	15
501-550	10
551-600	8
601-650	7
651-700	2
701-750	7
751-800	5
801-850	4
851-900	3
901-1000	7
1001-1550	9
1501-1700	2
1701-1900	0
1901-4000	3

#### Farm Operators in the Selected Counties

Table 7 indicates 10,239 operators live on farms which they operate. This indicates a large per cent of owner-operators living on a farm. The average age range of operators for the counties is 50.6 years to 54.9 years.



TABLE 7

FARM OPERATORS ON FARMS IN THE ELEVEN-COUNTY AREA<sup>a</sup>

17

~	Ow	ners		Average	Residing
County	Frit	1.3 m fm fm	Managers	Age	on Farm
	Full	Part			Operated
Caldwell	705	168	1	54.9	845
Christian	1,032	352	7	52.7	1,475
Crittenden	627	86	42	54.5	630
Daviess	1,056	477	6	50.7	1,650
Henderson	571	288	13	53.4	963
Hopkins	659	292	8	52.6	925
McLean	456	245	2	50.8	732
Muhlenberg	638	222	1	53.0	875
Todd	673	211	2	52.9	941
Union	305	160		50.6	491
Webster	465	228	3	53.2	712
Totals	7,187	2,729	85		10,239

albid., p. 2.

Table 8 indicates 7,967 persons over 25 years of age completed the eighth grade, 5,447 graduated from high school, and 1,103 received college degrees. The age group with the largest number in the farm operators' household is in the block 20 to 54 years of age.

TABLE 8

FARM OPERATOR HOUSEHOLDS ON FARMS IN THE ELEVEN-COUNTY AREA<sup>a</sup>

		rs of schoo 25 years ol	All persons in farm operators households			
County	Elem.	A,H.S.	College	10	20	55 and
	Years	YYears	Years	19	54	Over
	(8)	()(4)	(4)	yrs.	yrs.	Years
Caldwell Christian Crittenden Daviess	644	454	72	537	1,085	931
	990:	650	239	1,078	2,164	1,465
	670	328	75	416	861	673
	1,327	974	138	1,710	2,668	1,634



TABLE 8--Continued

	By year	s of schoo 25 years ol	All persons in farm operators households			
County	Elem. Years (8)	H.S. Years (4)	College Years (4)	10 19 yrs.	20 54 yrs.	55 and Over Years
Henderson Hopkins McLean Muhlenberg Todd Union Webster Totals	563 776 627 803 599 253 625 7,967	592 401 485 326 343 436 458 5,447	87 100 94 102 102 52 42 1,103	741 750 590 624 751 511 426 8,144	1,367 1,486 1,209 1,204 1,459 759 864 15,126	1,011 927 702 933 666 507 816

a<u>Ibid.</u>, p. 3.

Seventy-five per cent of farm operators are owners and 75 per cent of the operators live on the farm as recorded in Table 9. The survey includes 329 farm operators. It is significant that a large percentage of the operators are farm owners.

TABLE 9

FARM OPERATOR'S POSITION ON THE FARMS IN THE SAMPLE

Position	Number in Each Position	Per Cent
Owner living on farm Not owner living on farm Owner living off farm Not owner living off farm No response	207 47 42 28	62.9 14.3 12.8 8.5 1.5

Table 10 indicates 23 per cent of operators are under 40 years of age; 26 per cent are from 41 to 50 years of age; 28 per cent are from 51 to 60 years of age, and 22 per cent are over 61 years of age. The



wide age range and significant number in each age group indicates that operators interviewed represent many generations. The formal education, vocational training, and farming activities of operators enrich the data for this study.

AGE OF THE FARM OPERATORS IN THE STUDY

Range of Ages	20-30	31-40	41-50	51-60	61-70	71-80	81-up
Operators in Each Range	26	50	86	93	46	17	3
No Response -	- 8						<u> </u>

As shown in Table 11, 27 per cent completed less than the ninth grade; 39 per cent less than the twelfth grade; and 34 per cent completed high school. Eight per cent completed four years of college.

TABLE 11
YEARS THE OPERATOR COMPLETED IN SCHOOL

Years Operators Completed in School	0-7	8	9	10°	611	12	·173÷	14	15:	16	17
Number of Operators	18	71	14	18	9	112	12	13	3	22	6

The 202 under "none" is 61 per cent in Table 12. Twenty per cent have completed four years of Vocational Agriculture, and 29 per cent have had one, two, three or four years of Vocational Agriculture in high school. The information for Table 12 indicates the majority of operators have not had Vocational Agriculture in high school.



NUMBER OF YEARS THE OPERATOR COMPLETED IN
HIGH SCHOOL VOCATIONAL AGRICULTURE

Number Years Operators Completed in High School Vocational Agriculture	None	1	2	3	4	No Response
Number of Operators	202	6	17	6	67	31

The information in Table 13 indicates the largest number of operators have been in the occupation of farming from 21 to 30 years. Over 40 per cent have been in farming between 21 and 40 years. Table 13 indicates that the operators have had many years of experience in the occupation of farming. The median number of years the operators have been in farming is 27 years.

TABLE 13

NUMBER OF YEARS THE OPERATORS HAVE BEEN IN THE OCCUPATION OF FARMING

Years Operators Have Been Farming	1-10	11÷20	21-30	31-40	.⁄41 <b>-</b> 50.	51-60	·61 <del>`-</del> 70	71-80
Number of Operators	38	69	75	58	39	12	5	2
No Response 21								

Table 14 shows approximately 23 per cent of operators in each age group, 1 - 10 years, 11 - 20 years, and 21 - 30 years. Seventy per cent have been a farm operator from 1 to 30 years. A very small percentage of them have been farm operators for over 40 years.

This table also indicates the farmers interviewed have median number of 23 years as a farm operator. The median block is 21 - 30 years as a farm operator.



TABLE 14

NUMBER OF YEARS THE OPERATOR HAS BEEN A FARM OPERATOR

Years a Farm Operator	1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80
Number Operators	77	76	76	42	23	2	1	1
No Response 31								

The data summary which is shown in Table 15 indicates that 54 per cent have a good outlook for the future of farming and 79 per cent have a good or excellent outlook for the future of farming.

TABLE 15

THE FARM OPERATOR'S OUTLOOK OF THE FUTURE OF FARMING

Operator's Outlook of				
the Future of Farming	Excellent	Good	Poor	No Response
Number of Operators	83	179	36	31

#### Farm Employees on the Farms in the Survey

The total number of employees on the 517 farms in the survey is 693. This is an average of 1.34 employees per farm. Sixty-six per cent are employed full time.

TABLE 16

# EMPLOYEES ON THE FARMS (FULL-TIME EMPLOYED, MORE THAN HALF-TIME, LESS THAN HALF-TIME, AND FAMILY WORKERS)

Item	Number	Per Cent
Number employed full time (including operator) Number employed more than one-half time	459 34 114	66.2 04.9 16.4
Number employed less than one-half time Number family workers not included above Total number employed on the farms	86 693	12.4



Table 17 indicates 64 per cent of the employees are operators that are either owners or not-owners, and 45.6 per cent are owner-operators. The 22 foremen in this report and the 274 operators indicate the persons responsible for the management of the farms are approximately 70 per cent of the total number of employees.

TABLE 17

NUMBER EMPLOYED IN THE JOB TITLES

Job Title	Number with this Job Title	Per Cent
Operator-not Owner Operator and Owner Foreman Livestock Herdsman Tobacco Producer Agricultural Mechanic Other Crop Producer General Farm Work Only Total	79 195 22 5 12 3 15 96 427	18.5 45.6 5.1 1.1 2.8 0.7 3.5 22.4

The total number employed full time one year ago is 370; the present number needed is 368; and the number of employees needed full time five years hence is 358.

The total number employed part time doesn't vary significantly.



TABLE 18 NUMBER EMPLOYED FULL TIME AND PART TIME BY JOB TITLES

	No.	I	Full Time		Part Time		
Occupation	With	One	Present	Five	One	Present	Five
or Job Titles	This	Year	Number	Years	Year	Number	Years
-	Title	Ago	Needed	From	Ago	Needed	From
				Now			Now
Operator-not owner	79	65	63	72	^2	^2	1
Operator-owner	195	197	191	196	28	23	24
Foreman	22	21	20	19	1	1	1
Livestock Herdsman	5	.5	4	4			
Tobacco Producer	12	10	10	10	10	10	9
Agricultural Mechanic	. 3	2	2	2	1	1	1
Other Crop Producer	15	13	14	2	12	2	2
General Farm Work							
Only	96	57	64	57	74	72	78

Table 19 indicates the median turnover for each job title of those responding to be:

1. Operator-not owner	-	20 years
2. Operator-owner	-	20 years
3. Foreman		16 years
4. Livestock Herdsman	-	19 years
5. Tobacco Producer	-	4 years
6. Agricultural Mechanic	-	25 years
7. Other Crop Producer	-	6 years
8. General Farm Worker		7 years

The operators' turnover is lowest and tobacco producers, other crop producers and general farm work is highest.



TABLE 19
ESTIMATED JOB TITLE TURNOVER IN NUMBER OF YEARS

	Number Years Before Need of Replacement						No Re-			
Job Titles	1-3	4-6			13-15	16-18			25-up	sponse
Operator-not owner		4	3	8	2	2	8		19	29
Operator- owner Foreman	5	15 5	5	21 4	10 1		12 3	2 1	56 7	69 1
Livestock Herdsman		1		1			2		1	
Tobacco Producer	1	3			1				1	6
Agricultural Mechanic				1					2	
Other Crop Producer	1	3		2	1				1	7
General Farm Work Only	15	18	3	5	2		]		2	51

Calculations from data in Table 2- indicate the median for each job title to be:

1. Operator-not Owner	-	12 years
2. Operator-owner	-	12 years
3. Foreman	-	12 years
4. Livestock Herdsman	-	12 years
5. Tobacco Producer	-	12 years
6. Agricultural Mechanic	-	12 years
7. Other Crop Producer	<b>-</b>	12 years
8. General Farm Worker	-	12 years

A definite conclusion is that all occupations require a minimum of high



school education for successful and effective work in their job.

TABLE 20

THE YEARS OF FORMAL EDUCATION NEEDED BY JOB TITLES

Job Titles	Year	Years Education Attainment Necessary No Re-									
Job Titles	1-7	8	9	10	11	12	13	14	15	16-up	sponse
Operator-not Owner	-	2		2		37		· 4			34
Operator-owner	3	10	1	3	2	85		20		24	47
Foreman		1				11				5	5
Livestock Herdsman		1				2				1	1
Tobacco Producer						7					5
Agricultural Mechanic Other Crop Producer General Farm Work	1					3 8					6
Only	3		1	ľ		45					130

Table 21 indicates the largest number for operator-not owner in the \$6,000 and the over \$10,000 columns. The operator-owner title is lartest in the over \$10,000; however, the range from \$1,000 to \$8,000 is impressive. The approximate median for foreman is \$5,000, and for general farm work is \$4,000. The impressive conclusion from this data is the large number recorded in the over \$10,000 area.

TABLE 21
THE ESTIMATED WAGES PER YEAR BY 1973

		Sa	lar	уŀ	by	19	73	(1,	00	0 I	Ooll	ars)	
Job Titles	Less Than								·			Over	No Re-
	1	1	2	3	4	5	6	7	8	9	10	10	sponse
Operator-not Owner		5	3	1		6	14	7	6	2		29	10
Operator-owner	1	10	12	1.1	15		21	21	18	1		43	19
Foreman	·	1	2	3	5	5	3	1	2			4	2
Livestock Herdsman				2			1		1				1
Tobacco Producer	1	2				2	1						6
Mechanic (Mach. &													
Tool Care)			,		1	2							
Other Crop Producer		1		2	3	2	1			į			6
General Farm Work	2	7	5	10	17	8	3		_2				142



## Relative Importance of Competencies

Competency in this study was defined as the knowledge, ability, and/or skill applied to practical situations and the essential principles and techniques of a particular subject field. Schedule B of the instrument has three divisions. The divisions are knowledge, skill, and tools used. Competencies for the subject matter areas were predetermined and listed in the questionnaire. In the knowledge area 68 understandings were listed for consideration in the six subject matter areas. In the skill area, 62 abilities were listed in the six subject matter areas. In the tool use area there was listed the major tools that a person employed in farming would use in performing the skills listed.

The relative importance of competencies was determined from the information that the 329 farm operators provided. The operators were asked to rate each of the competencies in the questionnaire either as necessary, desirable, or unnecessary.

In order to provide a basis for comparing the individual competencies that were included in the investigation, an index, which for the purposes of this study was called a "relative importance index", was calculated. The method for calculating the relative importance index consisted of counting the number of respondents who indicated that they



<sup>&</sup>lt;sup>1</sup>C. O. Neel, <u>Employment Opportunities and Competencies Needed</u> in Farm Occupations in Selected Counties in Kentucky, Appendix, March, 1968, pp.1 - 8.

considered the competency to be either necessary, desirable or not necessary for a particular job title. The number of necessary responses was multiplied by a factor of two, the number of desirable responses was multiplied by a factor of one, and the number of not necessary responses was multiplied by a factor of zero. The three products thus obtained were summed and divided by the number of respondents. This yielded an index of importance for a single competency. Within a subject matter area an average relative importance index for the combined knowledges within that subject matter area was determined. This was accomplished by summing the individual relative importance index for all knowledges within that subject matter area and dividing by the number of knowledge on the survey instrument for the subject matter area. The same process was repeated for skills and separately for tools used in each subject matter area.

In order to provide a comparison between the six subject matter areas for a given job title, an average relative importance index was determined for each of the six subject matter areas. This was done by summing the individual relative importance indices for all competencies within a given competency area and divided by the number competencies in that area.

Figure 1 through 6 present the relative importance of knowledge and skills in each of the subject matter areas for the eight farm occupations. The relative importance of the subject matter area to each job title was



calculated as described in the preceding paragraph. Several conclusions can be formulated from information recorded in the bar graph.

The subject matter area, Agricultural Mechanics, Figure 5, indicates a need for considerable effort in this area for a majority of the job titles. There are two job titles in the subject matter area that are considerably below the mean. They are livestock herdsman and generall farm worker. Another interesting fact is that knowledge exceeds skills in all of the job title areas except Agricultural Mechanics and Other Crop Producer. Skill exceeds knowledge in relative importance for the job title Agricultural Mechanics. The subject matter area rating very close to the Agricultural Mechanics in relative importance is Soil and Soil Management. In Figure 6, knowledge exceeds skill for most of the job titles. The job titles in which skill exceeds knowlredge are livestock herdsman and other crop producer. The subject matter areas rating the lowest in relative importance in the areas of knowledge and skill are Farm Business Management and Marketing (Figure 3) and Animal Science (Figure 1). In the Animal Science area, knowledge exceeds skills for all of the occupations. However, the relative importance for all the job areas in this subject matter area are low compared to the other five subject matter areas. In Farm Business Management and Marketing the relative importance is high in the occupational areas of operator-not owner, operator-owner, foreman, and livestock herdsman.



The mean score of the subject matter areas in the knowledge group is:

1. Agricultural Mechanics	-	1.56
2. Soil and Soil Management	-	1.44
3. Farmstead, Buildings, Fences, and Water Systems	-	1.26
4. Plant Science	-	1.15
5. Animal Science	-	1.09
6. Farm Business Management and Marketing	-	1.08

The mean relative importance for the subject matter areas in skill is:

1. Agricultural Mechanics	-	1.46
2. Farmstead, Buildings, Fences, and Water Systems	-	1.38
3. Plant Science	-	1.31
4. Soil and Soil Management	-	1.29
5. Farm Business Management and Marketing	-	1.05
6. Animal Science	***	1.00

Figure 1 indicates that Animal Science is the most important subject matter area in the occupational job training of operator-owner and livestock herdsman. The bar graphs further emphasize that second to these, and with near equal importance, is the operator-not owner and foreman. Animal science is of least importance in the occupational



training for the occupation of tobacco producer and crop producer.

The relative importance of knowledge and skills in the Plant

Science subject matter area (Figure 2) are most important to and approximately equal in importance to each in the occupational areas of operator-not owner, operator-owner, tobacco producer, and other crop producer.

This subject matter area is of least importance in the training for the occupation of livestock herdsman.

Figures 2, 3, 4, and 5 can be interpreted to provide information needed to determine the relative importance of these subject matter areas in each of the occupational areas.

Figures 7 through 14 indicate the relative importance of knowledge and skills in each subject matter area for the job titles. For example, Figure 7 reveals the importance of each subject matter area to the job title of operator-not owner. The most predominant observation from these charts and from this information is that we have three job titles that indicate a need for emphasis in each of the subject matter areas. These job titles are operator-not owner, operator-owner, and foreman. The second most evident inference is that there is considerable variation in the needs for training in specific subject matter areas for the other occupational job titles. The relative importance index for these job titles as shown by this information varies from zero to 1.8. There are, however, subject matter areas in these job titles that are relatively higher in importance. These subject matter areas are Agricultural



Mechanics, Farmstead, Buildings, Fences, and Water Systems, and Soil and Soil Management.

It appears from the data that a curricula could be developed to provide training for three job titles. The three job titles with subject matter indexes that are about equal are operator-not owner, operator-owner, and foreman. Training for jobs on farms in the occupational areas other than these three varies considerably. An example is that in the training of livestock herdsman, there is emphasis in Animal Science and little emphasis in the Plant Science Area. However, in the tobacco producer job title there is a definite need for Plant Science and little need for Animal Science. These two job titles do have similar needs. Courses should be designed to meet the indicated needs for people employed in the specific jobs.

Figure 7 shows that the operator-not owner needs training especially in Agricultural Mechanics, Plant Science, Farm Business Management and Marketing, and Soil and Soil Management. The other two subject matter areas are of less importance. However, they are very close to the mean for this area.

The relative importance indices in Figure 8 indicate for the operatorowner definite needs in training in the Animal Science and Agricultural
Mechanics area. The data further indicates that in each of the other
subject matter areas there is a definite need for this content, but not
as great as in the others mentioned.



Figure 9 indicates that a person employed as foreman needs special training in the areas of Agricultural Mechanics and Soil and Soil Management. The Farmstead, Buildings, Fences, and Water Systems subject matter area is also important to the foreman. The other subject matter areas are less important and slightly below the mean.

Figure 10 illustrates that the livestock herdsman needs more learning opportunities in Animal Science, but the relative importance index is very close to the mean in the areas of Agricultural Mechanics, and Farmstead, Buildings, Fences, and Water System.

In Figure 11 for the job title of tobacco producer, we find that the subject matter area needs are first Agricultural Mechanics, second in Soil and Soil Management, and third in Plant Science. Very close to the mean for this job title is Farmstead, Buildings, Fences, and Water Systems.

Figure 12 indicates to us that the job title of Agricultural Mechanics has more variation in the needs of the subject matter areas than any other job title. Agricultural Mechanics, especially the skills in Agricultural Mechanics, is definitely needed along with the skills in the Farmstead, Buildings, Fences, and Water System area.

Figure 13 shows that in the job title of crop producer there are definite needs in the subject matter areas of Plant Science, Agricultural Mechanics, and Soil and Soil Management.

Figure 14 indicates to us in the job title of general farm worker



that they need the training in Plant Science, Soil and Soil Management, Farmstead, Buildings, Fences, and Water System.

Figures 1 through 6 provides the relative importance index for the knowledge and skill of each subject matter area for the job titles. Figures 7 through 14 present in bar graph design the value of knowledge and skill of each job title for the designated subject matter areas.

Each figure reveals the knowledge and skill mean with a solid or broken line. The above information is on the following pages, 34 through 40.

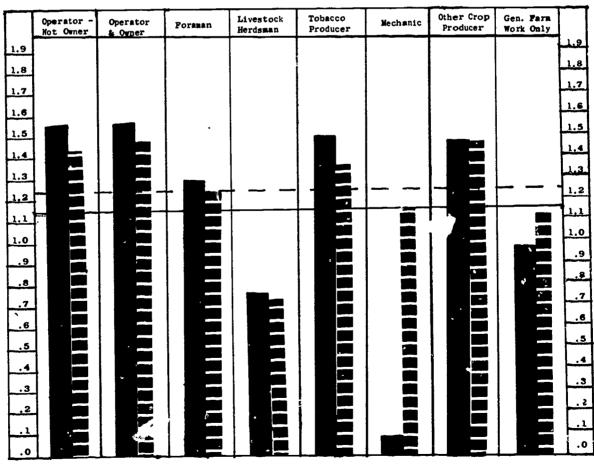
Figures 15A through 22C present graphically the relative importance of competencies for each job title. Figure 15A, for example, includes the knowledge competencies, 15B the skill competencies, and 15C the relative importance of tools used. Each series of figures includes competencies for the six subject matter areas. These figures are on page 41 through page 56.



Fig. 1. -- RELATIVE IMPORTANCE OF KNOWLEDGE AND SKILLS IN ANIMAL SCIENCE FOR EIGHT FARM OCCUPATIONS

	Operator - Not Owner	Operator & Owner	Foresan .	Livistock Herdaman	Tobacco Producer	Mechanic	Other Crop Producer	Gen. Farm Work Only	$\left\{ _{}^{.}\right\}$
•									
7									1.
6				1					1. 1.
5		o							1.
.3					<u>[</u>				1.
2									1
<u></u>	- <b>B</b> E-		<b>₩</b>						
. <u>0</u>	- 55 -	-		-				<del> </del> -	E
. 8		F							L
.7								<u> </u>	-
.6								<u> </u>	L
.5							_		
.3								E	
.2							E		-
									-

Fig. 2. -- RELATIVE IMPORTANCE OF KNOWLEDGE AND SKILLS IN PLANT SCIENCE FOR RIGHT FARM OCCUPATIONS



KNOWLEDGE (Understanding of)

KNOWLEDGE MEAN

SKILLS
(Ability to)
SKILL MEAN

Fig. 3. -- RELATIVE IMPORTANCE OF ENONLEDGE AND SELLS IN FARM SUSINESS MANAGEMENT AND
MARKETING

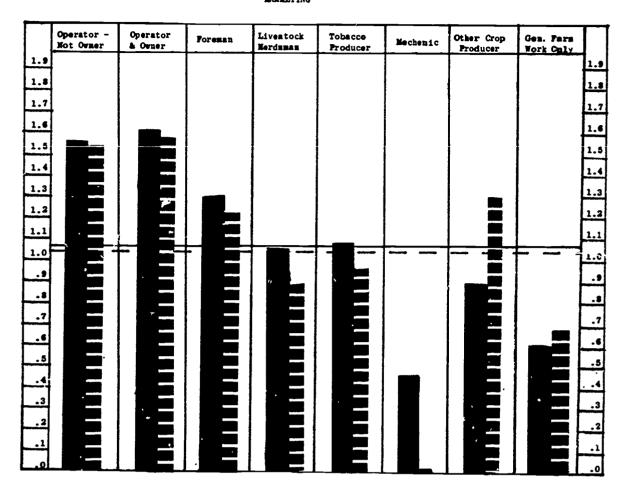


Fig. 4. -- RELATIVE IMPORTANCE OF ENOWLEDGE AND SKILLS IN FARMSTEAD, BUILDINGS, FENCES
AND WATER SYSTEMS

	Operator - Not Owner	Operator & Owner	Foreman.	Livestock Merdsman	Tobacco Preducer	Mechanic	Other Crop Producer	Gen. Farm Work Only	
1.5									1. 1.
1.7						=			1.
1.6									1.
.4									1. 1.
.з		6							1.
.1			HIGHE						1.
0									1. 1.
٠٠									Ŀ
.8									Ŀ
٠.									-
.5									Ŀ
.4		. :							Ŀ
.2				. =					
.1			7,2						

ENOWLEDGE (Understeading of)

\*

SKILLS
(Ability to)

SKILL MEAN

ENOWLEDGE MEAN

Fig. 5. -- RELATIVE IMPORTANCE OF KNOWLEDGE AND SKILLS IN AGRICULTURAL MECHANICS FOR BIGHT FARM
OCCUPATIONS

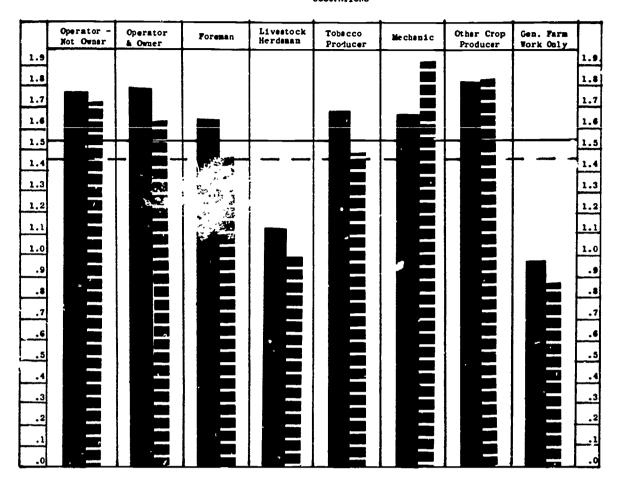
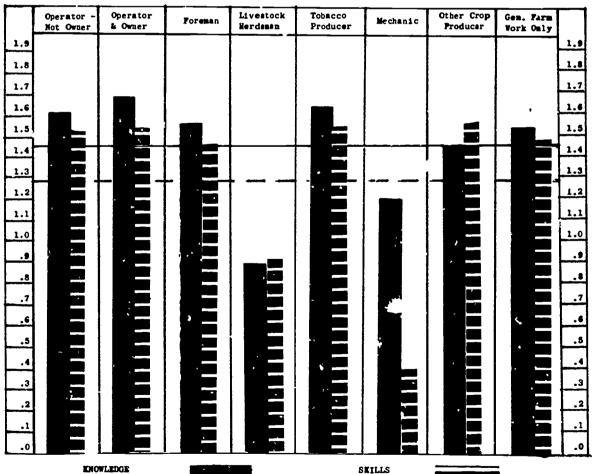


Fig. 6. -- RELATIVE IMPORTANCE OF KNOWLEDGE AND SKILLS IN SOIL AND SOIL MANAGEMENT FOR EIGHT
FARM OCCUPATIONS



ENOWLEDGE (Understanding of) . . . . . .

SKILLS
(Ability to

Knowledge mean

SKILL MEAN

\_\_\_\_

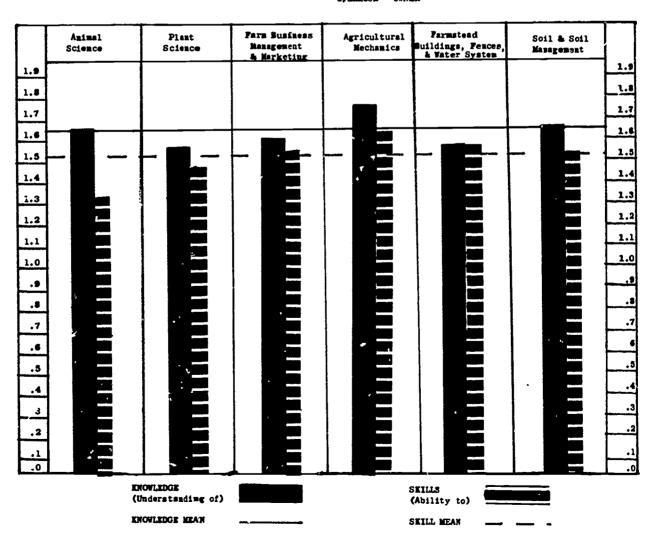
Fig. 7. -- RELATIVE IMPORTANCE OF ENOWIEDGE AND SMILLS IN EACH SUBJECT MATTER AREA FOR THE JOB T"TLE,

OPERATOR - NOT OWNER

	Animal Science	Plant Science	Farm Business Management & Marketing	Agricultural Mechanics	Farmstead Buildings, Fences, & Water System	Soil & Soil Management	
1.5						-	1.8
1.6							1.6
1.5			-	- 6	-		1.4
1.3							1.3
1.1							1.1
							.,
.8			E				.7
.6 .5		<b>.</b>	15		* =		.6 .5
.4							<u>.4</u> .3
.2							.2
.1	7						· · ·

Fig. 8. -- RELATIVE IMPORTANCE OF ENOWLEDGE AND SKILLS IN EACH SUBject matter area for the job title,

OPERATOR - OWNER



ERIC

Fig. 9. -- RELATIVE IMPORTANCE OF KNOWLEDGE AND SKILLS IN EACH SUBJECT MATTER AREA FOR THE JOB TITLE,

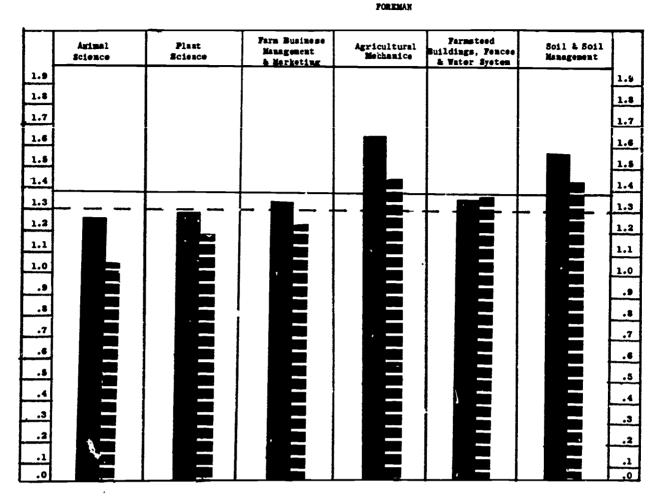


Fig. 10. -- RELATIVE IMPORTANCE OF KNOWLEDGE AND SKILLS IN EACH SUBJECT MATTER AREA FOR THE JOB TITLE, LIVESTOCK MERDEMAN

	Animal Science	Plast Science	Farm Businees Management & Marketing	Agricultural Mechanics	Farmstend Buildings, Fences, & Water System	Seil & Seil Management	
1.8							1.9 1.8 1.7 1.6
1.5 1.4 1.3 1.2							1.4 1.3 1.2 1.1
.9 .8 .7						Ē	.9
.5 .4 .3 .2							.5 .4 .3 .2 .1
<u> </u>		ENOWIZEGZ (Understanding of)			(Ability to)		

ENOWLEDGE MEAN

SKILL MEAN

Fig. 11. -- RELATIVE IMPORTANCE OF ENGWLEDGE AND SKILLS IN EACH SUBJECT MATTER AREA FOR THE JOB TITLE, TOBACCO PRODUCER

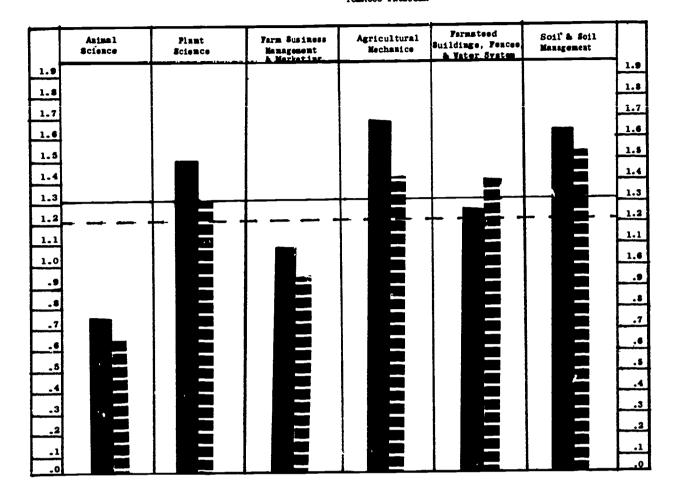


FIG. 12. -- RELATIVE IMPORTANCE OF ENOWLEDGE AND SKILLS IN EACH SUBJECT MATTER AREA FOR THE JOB TITLE, MECHANIC

	Aginal Science	Plant Science	Farm Business Management & Marketing	Agriculturel Mechanics	Farmetead Buildinge, Fencea, & Water System	Soil & Soil Management	1.9
1.9 1.8 1.7 1.6 1.5 1.4 1.3 1.2 1.1 1.0 .9 .8 .7 .6 .5 .4 .3 .2 .1 .0							1.8 1.7 1.6 1.5 1.4 1.3 1.2 1.1 1.0 .8 .8 .7 .6 .5 .4 .3 .2 .1 .0
	ĸ	NOWLEDGE			SKILLS (Ability to)		

(Understanding of)

(Ability to)

KNOWLEDGE MEAN

SKILL MEAN

Fig. 13. -- RELATIVE IMPORTANCE OF KNOWLEDGE AND SKILLS IN EACH SUBJECT MATTER AREA FOR THE JOB TITLE,
OTHER CROP PRODUCER

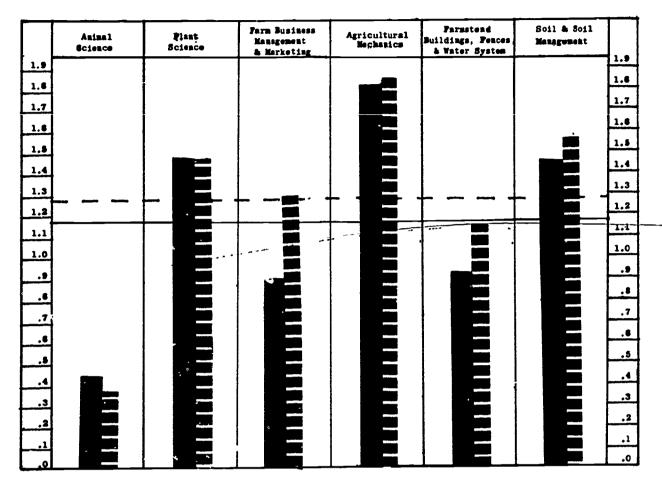


Fig. 14. -- RELATIVE IMPORTANCE OF ENOWLEDGE AND SKILLS IN EACH SUBJECT MATTER AREA FOR THE JOB TITLE,

GENERAL FARM WORK ONLY

1.9	Animal Science	Plant Science	Farm Business Management & Marketing	Agricultural Mechanics	Farmstoad Buildings, Fences, & Water System	Soil & Soil Management	1.9
1.6							1.7
1.6							1.5
1.3							1.3
1.0	-						1.0
.7					E		.8
.5		, , , , ,			E		.5
.3 .2							.2
ق.		NOWLEDGE Understanding of)			SKILLS (Ability to)		اق

SKILL MEAN

ENOVERIGE MEAN

### RELATIVE IMPORTANCE OF COMPETENCIES FOR JOB TITLE

I. OPERATOR - NOT OWNER Fig. 15A. -- KNOWLEDGE

Fig 158. -- SKILLS

	RELATIVE IND	ORTANCE INDEX 1.2 1.4 1.6 1.8
a water made impressed the OF		
I, EDOYLEDGE - UNDERSTANDING OF		
A. ARIMAL SCIENCE (Parm Animals)	ş i	
1. Genetics of Breeding Livsstock 2. Corry Out Breeding Practices		
3. Pasture Utilisatios		
4. Feeding Fractices 5. Selecting Feeds		
6. Preparing Feed Ratisme 7. Disease Prevention and Cestrol		
9. Farasite Preventios and Control		
9. Adequate Housing Requirements 10. Correct Use of Equipment		
11. Selecting Heré Replacements 12. Selecting for Sale		
1		
9. PLANT SCIENCE (Farm Crops)		
13. Plants and Plant Growth		
14. Classification of Crap Plants 15. Sail in Relation to Crops		
16. Retations or Crep Sequences 17. Cultiveties		
19. Small Grain Production		
19. Corn and Serghum Production 20. Ensiling Corn, Grasses, Legumes		
21. Legune Crap Production 22. Pasturo Management		
23. Diseases and Insects		
25. Tebacce Productios		
26. Small Fruits Production		
C. FAIM BUSINESS MANAGEMENT A MARKSTING		
27. Farm Recerds and Accounts		
28. Farm Record Analysis 28. Agricultural Financing and Credit		
30. Agricultural Insurance		
31. Farm Organization 32. Farm Management (Land, Labor, and		
Capital) 33. Labor Management		
34. Marketing Problems and Practices		
35. Agricultural and Related Price Analysis		
36. Farm Cooperatives 37. Federal Programs		
38. Farm Income Tax Instructions		
39. Farm Lave, Deeds, Inheritances, etc.		
D. AGRICULTURAL MECHANICS (Farning)		
40. Farm Tractors & Machines		
(Operation, Maintenance, etc.)		
(Plovs, Disks, etc.)		
43. Une & Care of Seedbed Refining Equipment (Marrows, Shredders,		
Pulverisers, etc.) 43. Use & Care of Fertilizer Appli-		
cators, (Spreaders, Fertilizer		
Drills, etc.) 44. Use & Care of Plusting and Seeding		
Equipment (New Planters, Drills, etc.)		
45. Use & Care of Weed, Insect & Dis- ease Control Equipment (Culti-	İ	
vaters, Tillers, Hose, Sprayers,	<u> </u>	
Dustere) 46. Use & Care of Marvesting Machines		
(M vers, Sakes, Balers, Marvesters, Combines, etc.)		
47. Susisess Management of Tractors and Machinery		
42. Use & Care of Electric Metors		
9. PARKISTRAD, BUILDINGS, PERKES. AND WATER STRIM		
49. Planned Layouta		
5C. Selecting Layout Plans		
51. Constructing Needed Equipment 53. Maintaining Needed Equipment		
53. Une of Farm Shop Tools 54. Field layouts & Fencing		
55. Selecting Vater Systems 56. Installing Vater Systems		
57. Care & Maistenancs of Water Systems		
F. SOIL AND SOIL MANAGEMENT		
58. Importance of Soils		
50. Soil Science 60. Proparing for Plants or Seeds		
61. Cultivation Practices		
63. Liming & Fertilizing 63. Uning Manures		
64. Soil Water Management 65. Centrelling Resion		
66. Adequate Drainage 67. General Fara Soil Management		
48. Irrigating		

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II. SE	ILL - ABILITY TO		•
	MILL COLDING CO. Autor Lat		
A. AN	MAL SCIENCE (Farm Animalm)		
1.	Mix Feeds		
2.	Select and Property Foods		
	Select Equipment Construct Equipment		
5.	Treat Ailments		
	Administer Internal Midicials		
	Apply External Medicines Use syringes, etc.		
9.	Artificially Isseminate		
	Keep Productiss Records		
	Register Amimals and Tattos Cuatrate		
13.	Deherm		
	Buy and Sell		
15.	Fit and Show		
9. <u>PL</u>	Off SCIENCE (Farm Crope)		
16.	Polliasto Plants		
17.	Prepare Seedhed		
19.	Apply Fortilizars, Line, stc.		
	Sow or Transplant Creps Cultivate Crops		
	Apply Insecticides, etc.		
22.	Control Woods and Chemicals		
	Hervest Grains Process Silage		
	Harvest and Cure Hay		
26.	Grase Pastures		
27. 28.	Centour Areas Test Seil		
29.	Identify Diseases & Insects		
30.			
C. FA	M SUSINESS MANAGEMENT	1	
_	& MARKETING		
21	Keep and Use Farm Records		
31. <b>32</b> .	Negetists Loans	I	
33.	Secure Insurance		
34. 35.	Nike Farm Budget Use Labor Effectively		
36.	Market Products		
37.	Use Farm Indexes		-
38.	Comply with Federal Programs		
39. 40.	Select and Use Coeperativas File Ferm Income Tax Return		
	ATCH TIME MENTANTOS (B		
D. A	RICULTURAL MECHANICS (Parming)	,	
41.	Tractor	,	
	n. Operate b. Service		
	b. Service c. Adjust		
	d. Repair		
42.	Soil Preparation Tools	}	
	n. Use Properly in Field b. Adjust	***************************************	
	c. Repair		
45	d. Service		
43.	Fertilisor Applicators a. Use Distributors		
	b. Use Mamure Spreaders	<b></b>	
44.	Planting, Seeding, Weed, Insect,	!	
	Disease Control Equipment a. Uss Crop Planters		
	b. Use Grain Drills	<b></b>	
	c. Use Cultivators & Rotary Hoes		
45.	d. Use Sprayers' and Dusters Marvesting Machines	!	
	n. Use Mewers & Rakes	·	
	b. Use Balers c. Use Earvesters		
	c. Use Harvesters d. Use Combines		
46.	Electric Motere (Use, Care, etc.)		
E, PA	METEAU, BUILDINGS, FENCES.		
- 25	AND WATER SYSTEM	Ī	
47	Make Plans	L	
	Use and Select Plans		
49.	Use Farm Shep Rand Tools	<b>}</b>	
50.	Use Farm Shop Power Tools		
	Install Water System Meiatain Water System		
53.	Construct Fonces		
7. 80	IL AND SOIL MANAGEMENT	1	1
		1	1
54.	Identify Soil Characteristics		
55. 56.	Take Soil Samples feet Seil and Interpret Recults		1
57.	Propare Seedbed		
58.	Apply Lime, Fortilizers, & Mamure		
	Cultivate Effectively Control Erosian		
	Previde Adequate Draitage		
62.	Irrigate		
		1	<del>-</del>



Fig. 15C -- RELATIVE IMPORTANCE INDEX OF TOOL USE FOR JOB TITLE

## I. OPERATOR-NOT OWNER

		REL	ATIVE	IM	PORTAN	ICE I	NDEX	
TOOLS	0 .2	.4 .	6 ,8	1,	0 1,2	1.4	1.6	1.8 2
		П	$\neg \top$				1	ı
Tractors (Plant Science)								
Land Preparation Tools								
Seeding Equipment Tractors (Agricultural Mechanics)								
Cultivators								
Row Planters					<b></b>	·		
Cultivators and Tillers								
Moldboard Plows Fertilizer Applicators					<b></b> -			
Harvesters of Grain								
Soil Preparing and Cultivating Tools					<del> </del> -			· <b></b>
Disk Harrows								
Grain Drills Farm Record Book					<b> </b>			
Farm Record Book Insecticide Applicators								
Yowers								
Production Record Book (Farm Bus. Mgmt. & Mkt.)					1			-
Farm Shop Hand Tools					]			-
Weed Control Applicators Fertilizer Distributors								-
Combines					<b> </b>			-
Farm Shop Power Tools					1			-
Sprayers and Dusters					1			
Fencing Equipment								
Form Account Book Rotary Hoes					<b>↓</b> -			
Rakes	<b>]</b>				<del> </del>			
Balers	<b> </b>				<del> </del>			
Income Tax Forms					1			
Other Engines					<b>1</b>			
Disk Plows Manure Spreaders	i				<b></b>		-	
Disk Tillers					<b>∤</b> -		-	
Soil Sampling Tools	]				<del> </del>			
Rotary Shredders				- <b></b>	1			
Special Crop Harvesters (Tobacco, Corn, Etc.)					Į			
Sprayers and Oilers Tooth Harrows					·{			
Loaders	<b> </b>				· <del>†</del>			
Transporting Equipment					t	·		
Castrating					1			
Drainage Tools Production Record Books (Amimal Science)								
Soil Packers	†				.∤			
Barn Cleaning Equipment								
Dehorning	ļ				1			
Control Chute					Ţ			
Forage Harvesters (Plant Science)	†				. <b> </b>	-		
Instruments for Injections	†							
Budget Instructions	]							
Soil Mulchers					1			
Plumbing Tools Forage Harvesters (Agricultural Mechanics)								
Soil Pulverizers					-}			
Subsoilers	]				- <b>†</b> -			
Feed Conveyor	.[				1			
Silage Harvesters					-			
Blueprints								
Feed Mill Office Machines	]			-				
Feet Trimming Tools					1			
Tattooing	]							
Soil Testing Equipment					ì			
Irrigating Tools	-		-		1			
Irrigation Equipment Fitting and Showing								
EXECUTING WILL DECARAGE	1	_						
	+		٠					



#### RELATIVE IMPORTANCE OF COMPETENCIES FOR JOB TITLE

II. OPERATOR AND OWNER

Fig. 16A. -- KHOWLEDGE

Fig. 168. -- SKILLS

							ORTANCE INDEX
			ORTANCE INDEX	l			
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I. 104	OWLINDGE - UNDERSTANDING OF		i	II. S	KILL - ABILITY TO	1	
				1			
A. A	NIMAL SCIENCE (Form Animals)		l l	A. A	NIMAL SCIENCE (Form Animals)		
			i i	_			
1	Genstics of Breeding Livsstock				Nix Feeds		
2.	Carry Out Breeding Practices				Salect and Prepara Feeds		
3.	Pasturs Utilization				Select Equipment		
4.	Feeding Practices				Construct Equipment		
5.	Selecting Feeds			5.	Treat Ailments		
	Preparing Feed Rations			6.			
	Disses Preventio. and Control			7.	Apply External Medicines		
	Parasits Prevention and Control			8.	Use syringss, stc.		
9.	Adequate Housing Requirements			9.	Artificially Inseminats		
10.	Correct Use of Equipment			10.	Register Animals and Tattoo		
11.	Selecting Mard Replacements			1 11.	Kssp Production Records		
12.	Selecting for Sale				Castrate		
<u>==</u>	Delecting for ball			13.			
		i	•	14.			
	LANT SCIENCE (Farm Crops)		1	15.	Fit and Show		
•. <u>*</u>	DATE SCIENCE (MILE CIOPS)			🛎			
13	Plants and Plant Growth			, 1	•		
	Classification of Crop Plants		i	l la.ı	LANT SCIENCE (Farm Crops)		
	Soil in Relation to Crops			1   :	<u> </u>		
				1 1 14	Pollinate Plants	L 1	
	Rotstions or Crop Sequences Cultivation				Prepara Seedbed		
	Small Grain Production			1 16.		L	
					Sow or Transplant Crops		
	Corn and Sorghum Production			20.			
	Ensiling Corn, Grasses, Legumes				Apply Insecticides, stc.		
	Legume Crop Production				Control Weeds and Chesicals		
	Pasture Management				Harvest Grains		
	Disease and Insects				Process Grains		
24.					Hervest and Cure May		
	Tobacco Broduction						
26.	Small Fruits Production				Grazs Pastures Contour Areas		
_							
_					Identify Diseases and Insects		
C. <u>Y</u>	ANN BUSINESS MANAGEMENT				Test Soil		_
	& MARKETING			30.	Irrigate		
	Farm Records and Accounts			l I.		ľ	
	Farm Record Analysis			C.	PARM BUSINESS MANAGEMENT	ľ	
	Agricultural Financing and Credit				& MARKETING		l
	Agricultural Insurance			l	Keep and Use Farm Records		
	Farm Organization		*				
32.	Farm Management (Land, Labor, and				Negotists Losns		
	Capital)				Secure Insurance		
33.	Labor Management		·	34.			
	Marketing Problems and Practices		1	35.			
35.	Agricultural and Related Price		ľ	l	Market Products		
	Analysis				Use Farm Indexes		
36.	Farm Cooperatives				Salect and Usa Cooperatives		<i>-</i>
				38.		ľ	
37.	Federal Programs			39.	Comply with Federal Programs		
38.	Federal Programs Farm Income Tax Instructions				Comply with Federal Programs		
38.	Federal Programs			39.	Comply with Federal Programs		
38.	Federal Programs Farm Income Tax Instructions			39. 40.	Comply with Federal Programs File Farm Income Tax Return		
38.	Federal Programs Farm Income Tax Instructions Farm Laws, Deeds, Inheritances, stc.			39. 40.	Comply with Federal Programs		
38.	Federal Programs Farm Income Tax Instructions			39. 40. D.	Comply with Federal Programs File Farm Income Tax Return AGRICULTURAL MECHANICS (Farming)		
38.	Federal Programs Farm Income Tax Instructions Farm Lavs, Deeds, Inheritances, stc.  GRICULTURAL MECHANICS (Farming)			39. 40. D.	Comply with Federal Programs File Farm Income Tax Return  AGRICULTURAL MECHANICS (Farming)  Tractor		
38.	Yederal Programs Farm Income Tax Instructions Farm Lave, Deeds, Inheritances, stc.  GRICULTURAL MECHANICS (Farming)  Farm Tractors and Machines			39. 40. D.	Comply with Federal Programs File Farm Income Tax Return  AGRICULTURAL MECHANICS (Farming)  Tractor s. Operats		
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38. 39. D. 40	Pederal Programs Farm Income Tax Instructions Farm Laws, Deeds, Inheritances, stc.  GRICULTURAL MECHANICS (Farming)  Farm Tractors and Machines (Operation, Maintenance, stc.) Use & Care of Tillage Equipment			39. 40. D.	Comply with Federal Programs File Farm Income Tax Return  AGRICULTURAL MECHANICS (Farming)  Tractor a. Operate b. Service c. Adjust		
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Fig. 16C -- RELATIVE IMPORTANCE INDEX OF TOOL USE FOR JGB TITLE

## II. OPERATOR-OWNER

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TOOLS	0 .2	.4	.6	,8 1.	.0 1	, 2	1.4	1.6	1.8 2
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(m) and (follows)									
Tractors (Plant Science) Land Preparation Tools									
Farm Shop Hand Tools									
Seeding Equipment					İ				_
Farm Record Book					I				
Fencing Equipment					ļ				
Production Record (Farm Bus. Mgmt. & Mkt.) Soil Preparing and Cultivating Tools					<del> </del>				•
Tractors (Agricultural Mechanics)					╁╼				•
Cultivators					<del> </del> -				
Farm Shop Power Tools					†·				
Income Tax Forms		<b></b>			†				
Mowers									
Harvesters of Grain									
Row Planters					ļ				
Grain Drills					· <b></b> -				
Production Record Books (Animal Science)					+				
Castrating Farm Account Book					· <b>†-</b> -				
Farm Account Book Moldboard Plows	<b> </b>				+				
Moldboard Flows Disk Harrows					+				
Rakes					t				
Cultivators and Tillers	<del></del>				-†				
Fertilizer Applicators					-1				
Weed Control Applicators								_	
Insecticide Applicators								-	
Sprayers and Oilers									
Balers									
Control Chute					L				
Manure Spreaders					-r			•	
Transporting Equipment Sprayers and Dusters								•	
Dehorning								•	
Barn Cleaning Equipment	<b> </b> -								
Fertilizer Distributors					-1				
Instruments for Injections									
Combines									
Loaders									
Other Engines									
Rotary Hoes									
Soil Sampling Tools					· <b>-</b>				
Forage Harvesters (Plant Science)					-+-				
Budget Instructions	† <b></b>				-+-		-		
Feed Conveyor Disk Tillers					-+-		-		
Rotary Shredders					-+-		-		
Special Crop Harvesters (Tobacco, Corn, Etc.)					- 1		-		
Disk Plows					1		-		
Tooth Harrows	<b>┧~</b> :					·	-		
Drainage Tools					ł				
Farm File System									
Soil Packers					- 1				
Plumbing Tools									
Forage Harvesters (Agricultural Mechanics)					-+				
Subsoilers					-+				
Soil Pulverizers Blueprints	7				{				
Feed Mill									
Silage Harvesters	<b></b>				~				
Office Machines	<b>⅃</b>				-				
Soil Mulchers	<b>⊣</b>				•				
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Soil Testing Equipment Feet Trimming Tools									
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Soil Testing Equipment Feet Trimming Tools	]		 	•					



## RELATIVE IMPORTANCE OF COMPETENCIES FOR JOB TITLE

Fig. 17A. -- KNOWLEDGE

III. PORMAN

Fig. 178. -- SKILLS

	RELATIVE INP	ORTANCE INDEX 1 2 1.4 1.8 1.8 2	
	<del>' ' ' ' ' </del>	<del>-11111111</del>	II. SEILL - A
I. MOWLEDGE - UNDERSTANDING OF			
A. ANIMAL SCIENCE (Fareimals)			A. ANIMAL S
1. Genetics of Breeding Livesteck 2. Cerry Out Breeding Fractices			1. Mix Fed 2. Select
3. Pasture Utilization			3. Select 4. Cesstr
4. Feeding Fractices 5. Selecting Feeds			5. Treat
8. Preparing Feed Rations 7. Disease Prevention and Centrol			7. Apply
6. Parssite Preventies and Control			6. Use my 9. Artifi
9. Adequate Housing Requirements 10. Correct Use of Equipment			10. Regist
11. Selecting Nerd Replacements 12. Selecting for Sale		<u></u>	12. Castra
			13. Dehorn 14. Buy an
B. PLANT SCIENCE (Farm Crops)			15. Fit am
13. Plants and Plant Growth			B. PLANT SC
14 Classification of Crep Plasts 15. Seil 's Erlation to Crops			
16. Rotat on or Crop Sequences 17. Cultivation			18 Follin 17. Frepar
16. Small Grein Production			16. Apply 19. Sow or
<ol> <li>Corn and Sorghue Production</li> <li>Resiling Corn, Grasses, Legumes</li> </ol>		-	20. Cultiv 21. Apply
21. Logine Crop Production 22. Pasture Management			22. Costro
23. Diseases and Insects 24. Weed Plants and Control			23, Harves 26, Proces
25 Tehacce Production			25. Marves 28. Graze
26. Smill Fruits Production			27. Cesteu 28. Test S
C. FARM BUSINESS MANAGEMENT	1		29. Identi
& MARKETING			30. Irrigs
27. Parm Records and Accounts			C. FARE BUS
28. Farm Record Analysis 29. Agricultural Financing and Credit			AND
30. Agricultural Insurance 31. Farm Organization			31. Keep s
32. Farm Management (Land, Labor, and			32. Negoti
Capital) 33. Labor Management	<u>}</u>		34. Make I
34. Marketing Problems and Practices 35. Agricultural and Releted Price		1	36. Market
Analysis 36. Farm Cooperatives		<del></del>	37. Use Fa
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36.39.40.40.41.42.43.44.45.45.	Comply eith Federal Programs File Farm Income Tax Return  GRICULTURAL METHANICS (Farming)  Tractor  a. Operate b. Service c. Adjust d. Repair Soil Preparation Tools a. Use Properly in Field b. Adjust c. Repair d. Service Fertilizer Applicators a. Use Distributers b. Use Manure Spreaders Finating. Seeding. Weed, Insect, Disease Control Equipment a. Use Now Crop Planters b. Use Grain Drills c. Use Cuttivators & Rotary Roes d. Use Sprayers and Dusters Harvesting Machines a. Use Mowers & Rakes b. Use Balser c. Use Harvesters d. Use Combines Electric Moters (Use, Care, etc.)  FARNSTEAD, RULLDINGS, FENCES, AND WATER SYSTEM  Make Flans Use and Select Plans Use Farm Shop Hand Tools Use Farm Shop Power Teolp Install Water System Construct Fences  SOIL AND SOIL MANAGEMENT  Identify Soil Characteristics Take Seil Samples Test Soil and Interpret Results Frepare Seedbed Apply Lime, Fertilizers, & Manure Cultivate Effectively		
36.39.40.40.40.41.41.42.43.44.45.45.50.51.52.53.77.54.55.55.55.55.55.55.55.55.55.55.55.55.	Comply eith Federal Programs File Farm Income Tax Return  GRICULTURAL METHANICS (Farming)  Tractor  a. Operate b. Service c. Adjust d. Repair Soil Preparation Tools a. Use Properly in Field b. Adjust c. Repair d. Service Fertilizer Applicators a. Use Distributers b. Use Manure Spreaders Finating, Seeding, Veed, Insect, Disease Control Equipment a. Use Row Crop Planters b. Use Grain Drills c. Use Cuttivators h Rotary Roes d. Use Sprayers and Dusters Harvesting Machines a. Use Mowers h Rakes b. Use Balers c. Use Harvesters d. Use Combines Electric Moters (Use, Care, etc.)  FARMSTEAD, RULLDINGS, FENCES, AND WATER SYSTEM  Make Flans Use and Select Plans Use Farm Shop Fower Teole Install Water System Construct Fences  SOIL AND SOIL MANAGEMENT?  Identify Soil Characteristics Take Seil Samples Test Soil and Interpret Results Frepare Seeded Apply Line, Fertilizers, & Manure Cultivate Effectively Control Brosion Frovide Adequate Disinage		



Fig. 17C -- RELATIVE IMPORTANCE INDEX OF TOOL USE FOR JOB TITLE

## III. FOREMAN

			REI	ATI	VE IN	PORT	APCE	Index	•
TOOLS	0	2	.4	.6_	,8 l	0 1	21.	८ 1.6	1.8 2.
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Farm Shop Hand Tools									•
Fencing Equipment				- <i></i> -					
Tractors (Plant Science) Soil Preparing and Cultivating Tools									
Seeding Equipment									
Land Freparation Tools									
Cultivators Farm Shop Power Tools						ŀ			
Control Chute						1			
Fertilizer Applicators						ł i		<b>-</b>	
Sprayers and Oilers Production Record Book (Farm Bus. Mgmt. & Mkt.)						ļ			
Harvesters of Grain						•			
Tractors (Agricultural Mechanics)									
Row Planters Cultivators and Tillers						ŧ			
Insecticide Applicators						l l			
Farm Record Book					·	1			
Farm Account Book						[			
Moldboard Plows Mowers						F			
Fertilizer Distributor						ŀ			
Grain Drills	}					l.			
Rakes Balers						ļ			
Soil Sampling Tools						<b>!</b> -			
Production Record Books (Amimal Science)						E			
Transporting Equipment Drainage Tools						<u></u>			
Castrating						<b></b> -			
Weed Control Applicators						<u> </u>			
Barn Cleaning Equipment Sprayers and Dusters						Ĺ			
Feed Conveyor						<del> </del>	-		
Forage Harvesters						<b>-</b>	-		
Income Tax Forms						Ţ	-		
Disk Harrows Manure Spreaders						╂	-		
Rotary Hoes						1	<u>-</u>		
Plumbing Tools							-		
Loaders	4								
Instruments for Injections						• •			
Dehorning									
Other Engines Disk Tillers						╂			
Farm File System	1					1			
Feed Kill	==					f			
Soil Packers Forage Harvesters						<b>-</b> -			
Blueprints	<b>↓</b>								
Silage Harvesters									
Tooth Harrows Tattooing									
Budget Instructions	1					1			
Disk Plows	1					ŀ			
Soil Testing Equipment	1								
Rotary Shredders Soil Mulchers	<u> </u>								
Soil Pulverizers									
Special Crop Harvesters	<del> </del>					1			
Irrigating Tools Subsoilers	†								
Office Machines	1				-	1			
Feet Trimming Tools	4					1			
Fitting and Showing Irrigation Equipment	4					1			
TILINALIOR ENGINEERS	†								



#### RELATIVE IMPORTANCE OF COMPETENCIES FOR JOB TITLE

Fig. 16A. -- KNOWLEDGE

IV. LIVESTOCK HERDSMAN

FAS. 168. -- SEILLS

•		RELATIVE IN	PORTANCS INDEX
		2 4 6 8	1.2 1.4 1.6 1.8 2
1. 10	WLEDGE - UNDERSTANDING OF	1 ' ' ' '	' ' ' '
A. A	HIMAL SCIENCE (Perm Animals)		
	Genetics of Sreeding Livestock		
2.	Cerry Out Breeding Practices		
3.	Fasture Utilizatios Feeding Practices		
5.	Selecting Feeds		
	Preparing Feed Rations Disease Prevention and Control		
*.	Farmsite Prevention and Costrol Adequate Heusing Requirements		
10.	Correct Use of Equipment		
11.	Selecting Nord Replacements Selecting for Sele		
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B. 2	LANT SCIENCE (Form Crops)		
	Plants end Plant Growth		
14.	Clessification of Crop Plants		
15. 16.	Soil in Relation to Creps Rotatiess or Crop Sequences		
17.	Cultivation	ļ	
	Small Grain Production Corm and Sorghum Production		
20.	Legume Crep Production Engiling Corn, Grasses, Legumes	<b></b>	<u> </u> _
22.	Pasture Management		
	Diseases end Insects Weed Plents and Centrol		
25.	Tebscco Production		
<del>26</del> .	Small Fruits Production		
	AND DISTRICT MANAGEMENT	ļ	
υ. <u>ε</u>	ANM BUSINESS MANAGEMENT  & MARKETING		
27	Farm Records and Accounts		
28.	Farm Record Analysis		
	Agricultural Financing and Credit Agricultural Insuresce		
31.	Ferm Organization		<b></b>
32.	Farm Management (Land, Labor, and Copitel)		
	Labor Hanagement		<del> </del>
	Marketing Problems and Practices Agricultural and Related Price	[	<u> </u>
36	Amelysis Form Cooperatives		
37.	Federal Programs	ļ	
	Farm Iscome Tax Instructions Farm Laws, Deeds, Inheritances, stc.		i
=		<del></del>	
D. A	GRICULTURAL MECHANICS (Farming)		•
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40.	Farm Tractors & Machines (Operation, Maintenance, etc.)	ļ	
40.	Farm Tractors & Machines (Operation, Maintenance, etc.) Use & Care of Tillage Equipment		
40. 41.	Parm Tractors & Machines (Operation, Maintenance, etc.) Use & Care of Tillage Squipment (Plows, Disks, etc.) Use & Care of Seedbed Refining		
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38. 39. 40. 41. 42. 43. 44. 45. 45. 45. 50. 51. 52. 53. 79. 55. 55. 55. 55. 55. 55. 55. 55. 55. 5	Comply with Federal Programs File Farm Income Tax Return  AGRICULTURAL MECHANICS (Farming)  Trecter  s. Operate b. Service c. Adjust d. Repair Soil Preparation Tools s. Use Properly in Field b. Adjust c. Repair d. Service Fartilizer Applicators s. Use Distributors b. Use Manure Spreaders Flenting, Seeding, Weed, Insect, Disease Control Equipment s. Use Row Crop Flenters b. Use Grain Drills c. Use Cuttivators and Rotary Noes d. Use Sprayers and Dusters Harvesting Machines s. Use Mowers & Rakes b. Use Balers c. Use Harvestere d. Use Combines Ilectric Motors (Use, Care, etc.)  PARMISTEAD, BUILDINGS, PENCES, AND WATER SISTEM  Make Plans Use Farm Shop Hand Teols Use Farm Shop Hand Teols Use Farm Shop Hower Tools Install Water System Maintsin Water System Construct Fences  SOIL AND SOIL MUMAGEMENT Identify Soil Characteristics Take Soil Samples		
38. 39. 40. 41. 41. 42. 43. 44. 45. 55. 53. 54. 55. 57. 57. 57.	Comply with Federal Programs File Farm Income Tax Return  AGRICULTURAL MECHANICS (Farming)  Tracter  e. Operate b. Service c. Adjust d. Repair Soil Preparation Tools e. Use Properly in Field b. Adjust c. Repair d. Service Fartilizer Applicators e. Use Distributors b. Use Manure Spreaders Flenting, Seeding, Weed, Insect, Diseass Control Equipment e. Use Row Crop Flenters b. Use Grain Drills c. Use Control Equipment e. Use Row Crop Flenters b. Use Grain Drills c. Use Cultivators and Rotary Moes d. Use Sprayers and Dusters Harvesting Machines s. Use Mowers & Rakes b. Use Eajers c. Use Harvestere d. Use Combines Electric Motors (Use, Care, etc.)  FARKSTEAD, BUILDINGS, FENCES, AND WATER SYSTEM  Make Fishs Use and Select Flans Use Form Shop Hond Tools Use Form Shop Fower Tools Install Water System Maintsin Water System Maintsin Water System Construct Fences  GOLL AND SOIL MANAGEMENT  Identify Soil Characteristics Take Soil Samples Test Soil and Interpret Results Frepare Seedbed		
38. 39. 40. 41. 42. 43. 44. 45. 45. 50. 53. 51. 52. 53. 56. 57. 58. 58.	Comply with Federal Programs File Farm Income Tax Return  AGRICULTURAL MECHANICS (Farming)  Trecter  s. Operate b. Service c. Adjust d. Repair Soil Preparation Tools s. Use Properly in Field b. Adjust c. Repair d. Service Fartilizer Applicators s. Use Distributors b. Use Manure Spreaders Plenting, Seeding, Weed, Insect, Disease Control Equipment s. Use Row Crop Plenters b. Use Grain Drills c. Use Cultivators and Rotary Noes d. Use Sprayers and Dusters Harvesting Machines s. Use Mowers & Rakes b. Use Balers c. Use Harvestere d. Use Combines Electric Motors (Use, Care, etc.)  FARKISTEAD, BUILDINGS, FENCES, AND WATER SYSTEM  Make Plans Use Farm Shop Hand Teols Use Farm Shop How Tools Install Water System Maintsin Water System Maintsin Water System Construct Fences  SOIL AND SOIL MANAGEMENT  Identify Soil Characteristics Take Soil Samples Tast Soil samples		
38. 39. 40. 41. 42. 43. 44. 45. 45. 50. 53. 55. 56. 59. 56. 59. 60. 60.	Comply with Federal Programs File Farm Income Tax Return  AGRICULTURAL MECHANICS (Farming)  Tracter  s. Operate b. Service c. Adjust d. Repair Soil Preparation Tools s. Use Properly in Field b. Adjust c. Repair d. Service Fartilizer Applicators s. Use Distributors b. Use Hanure Spreaders Flenting, Seeding, Weed, Insect, Diseass Control Equipment s. Use Row Crop Flenters b. Use Grain Drills c. Use Cutivators and Rotary Noes d. Use Sprayers and Dusters Harvesting Machines s. Use Mowers & Rakes b. Use Agiers c. Use Harvestere d. Use Combines Electric Motors (Use, Care, etc.)  PARKSTEAD, BUILDINGS, FENCES, AND WATER SISTEM Make Plans Use Farm Shop Hand Teols Use Farm Shop Hower Tools Install Water System Maintein Water System Construct Fences  GOLL AND SOIL MANAGEMENT  Identify Soil Characteristics Take Soil Samples Test Soil and Interpret Results Trepare Seedbed Apply Lime, Fertilizers, & Manure Cultivate Effectively Control Erosion		
38. 39. 40. 41. 42. 43. 44. 45. 45. 50. 51. 52. 53. 54. 57. 58. 59. 60. 61. 61.	Comply with Federal Programs File Farm Income Tax Return  AGRICULTURAL MECHANICS (Farming)  Tracter  s. Operate b. Service c. Adjust d. Repair Soil Preparation Tools s. Use Properly in Field b. Adjust c. Repair d. Service Fartilizer Applicators s. Use Distributors b. Use Hanure Spreaders Flenting, Seeding, Weed, Insect, Diseass Control Equipment s. Use Row Crop Flenters b. Use Grain Drills c. Use Cutivators and Rotary Noes d. Use Sprayers and Dusters Harvesting Machines s. Use Mowers & Rakes b. Use Agiers c. Use Harvestere d. Use Combines Electric Motors (Use, Care, etc.)  PARKSTEAD, BUILDINGS, FENCES, AND WATER SISTEM Make Plans Use Farm Shop Hand Teols Use Farm Shop Hower Tools Install Water System Maintein Water System Construct Fences  GOLL AND SOIL MANAGEMENT  Identify Soil Characteristics Take Soil Samples Test Soil and Interpret Results Trepare Seedbed Apply Lime, Fertilizers, & Manure Cultivate Effectively Control Erosion		

## Fig. 18C -- RELATIVE IMPORTANCE INDEX OF TOOL USE FOR JOB TITLE

## IV. LIVESTOCK HERDSMAN

TOOLS	RELATIVE IMPORTANCE INDEX
10005	0 .2 .4 .6 .8 1.0 1.2 1.4 1.6 1.8 2
Sprayers and Oilers	
Feed Conveyor	
Feed Mill	
Control Chute	
Barn Cleaning Equipment Farm Record Book	
Tractors (Agricultural Mechanics)	
Farm Shop Hand Tools	
Production Record Books (Animal Science)	
Instruments for Injections	
Dehorning Farm Shop Power Tools	
Fencing Equipment	
Transporting Equipment	
Production Record Book (Farm Bus. Mgmt. & Mkt.)	
Income Tax Forms	
Other Engines Mowers	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Soil Preparing and Cultivating Tools	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Castrating	
Tractors (Plant Science)	
Loaders	
Soil Sampling Tools	
Silage Harvesters Farm Account Book	, 
Tattooing	
Feet Trimming Tools	
Fertilizer Applicators	
Seeding Equipment	
Insecticide Applicators	
Forage Harvesters Disk Harrows	
Soil Packers	waw. wa ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~
Fertilizer Distributor	
Sprayers and Dusters	
Rakes	
Balers Project Tools	
Drainage Tools Land Preparation Tools	
Manure Spreaders	
Cultivators and Tillers	
Blueprints	
Plumbing Tools	
Fitting and Showing Cultivators	
Weed Coutrol Applicators	
Harvesters of Grain	
Disk Plows	
Disk Tillers	
Tooth Harrows Rotary Shredders	
Soil Pulverizers	
Row Planters	
Grain Drills	*****
Rotary Hoes	
Forage Harvesters	
Combines Irrigating Tools	
Budget Instructions	
Moldboard Plows	
Soil Mulchers	
Farm File System	
Irrigation Equipment	
Subsoiler Special Crop Harvesters	
Soil Testing Equipment	
	1
Office Machines	



#### RELATIVE IMPORTANCE OF COMPETENCIES FOR JOS FITLE

Pig. 19A. -- KNOWLEDGE

V. TORACCO PRODUCER

Fig. 198. -- SKILLS

	ERLATIVE IN	PORTANCE INDEX
'	3 4 6 8 7	1.2 1.4 1.6 1.8
I, KNOWLEDGE - UNDERSTANDING OF	` ` ` ` `	
A. ANIMAL SCIENCE (Para Animala)		j
1. Genetics of Breeding Livestock		
2. Carry Out Breeding Practices		
3. Pasture Utilization 4. Peeding Practices		
5. Selecting Peeds		
<ol> <li>Freparing Feed Sations</li> <li>Disease Prevention and Centrol</li> </ol>		İ İ
B. Parasite Preventios and Control		
9. Adequate Meusing Requirements 10. Correct Use of Equipment		
11. Selecting Herd Replacements		
12. Selecting for Sale		
B. FLANT SCIENCE (Farm Crops)		
13. Plants and Plant Growth 14. Classification of Crop Plants		
15. Soil in Relation to Crops		
16. Rotations or Crop Sequences 17. Cultivation		
18. Small Grain Production	<u></u>	
19. Corn and Sorghum Pro ction 20. Ensiling Corn, Gras. Legunes		
21. Legume Crop " 22. Pasture Mar	<u> </u>	
23. Diseases a .m		{
24. Weed Pisnts a ntrol 25. Tobacce Product on		
26. Small Fruits Production		
C. FARM BUSINESS MANAGEMENT	ĺ	
& MARKETING		j
27. Parm Records and Accounts 28. Farm Record Analysis		
29. Agricultural Pinsncing and Credit		{
30. Agricultural Insurance 31. Farm Organization		
32. Farm Management (Land, Labor, and		
Capital) 33. Labor Management	<u> </u>	†   
34. Marketing Problems and Fractices		
35. Agricultural and Related Price Analysis		
36. Farm Cooperatives		
37. Federal Programs 38. Parm Iscome Tax Instructions		
39. Farm Laws, Deeds, Inheritances, etc.		
D. AGRICULTURAL MECHANICS (Farming)		
40. Farm Tractors & Machines		
40. Farm Tractora & Machines (Operation, Maintenance, etc.)		
40. Farm Tractors & Machines (Operation, Maintenance, etc.) 41. Use, & Care of Tillage Equipment (Flows, Disks, etc.)		
40. Farm Tractors & Machines (Operation, Maintenance, etc.) 41. Use, & Care of Tillage Equipment (Plows, Disks, etc.) 42. Use & Care of Seedbed Refining	•	
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10,	Keep Production Records		i
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₽.	PLANT SCIENCE (Fare Crops)		1
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	Pollinste Plants Prepare Scedbed		ļ
	Apply Fertilizers, Line, etc.		
19.	Sow or Transplant Crops		
20.			
21.	Apply Insecticides, etc.	ļ	
22.	Control Weeds and Chemcials		
23.	Harvest Grains		<del> </del>
	Process Silsge Harvest and Cure Hay		1
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Fig. 19C -- RELATIVE IMPORTANCE INDEX OF TOOL USE FOR JOB TITLE

V. TOBACCO PRODUCER

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TOOLS	_	^		_						8 2.
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			 	!	<u> </u>			! 	) 	<del>.</del>
Tractors (Plant Science) Land Preparation Tools										
Cultivators						ļ				
Farm Shop Hand Tools						}				-
Seeding Equipment						<del> </del> -				
Farm Shop Power Tools						t				
Soil Preparing and Cultivating Tools						<b>T</b>				
Insecticide Applicators						I				
Weed Control Applicators Tractors (Agricultural Mechanics)						ļ				
Moldboard Plows						<del> </del>				
Disk Harrows						<del> </del>				
Fertilizer Distributor						† <b>-</b>				
Manure Spreaders .						†				
Fertilizer Applicators										
Production Record Book (Farm Bus. Mgmt. & Mkt)						<u> </u>				
Cultivators and Tillers						ļ				
Fencing Equipment Soil Packers						<b></b>				
Loaders						<del> </del>		•		
Special Crop Harvesters						<del> </del>				
Plumbing Tools										
Drainage Tools			~							
Tooth Harrows							<del>-</del>			
Soil Pulverizers							-			
Soil Mulchers Sprayers and Dusters						L	-			
Other Engines						<b>.</b>				
Row Planters						·	•			
Grain Drills						╁	•			
Mowers						· <b></b>	•			
Farm Account Book										
Income Tax Forms										
Disk Tillers Rotary Hoes						. <b> </b>				
Soil Sampling Tools						. <b>-</b> -				
Control Chute						╁				
Barn Cleaning Equipment						t				
Harvesters of Grain						T				
Disk Plows						]				
Blueprints						1				
Forage Harvesters Subsoilers	l					1				
Rotary Shredders						ł				
Rakes						1				
Irrigating Tools						1				
Feed Conveyor						1				
Transporting Equipment	l					1				
Budget Instructions						1				
Farm Record Book Feed Mill	<b> </b>					1				
Balers	1				•	1				
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## RELATIVE IMPORTANCE OF COMPETENCIES FOR JOB TITLE

VI. MECHANIC

Fig. 208. -- SKILLS

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S. Parzeite Prevention and Control S. Correct Uss o. Equipment		
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<del></del>	0	
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14. Classification of Crop Fiants  15. Soil in Relation to Grops	o	
16. Rotations or Crop Sequescas	0 ;	Ĭ
17. Cultivation	0	Ī ļ
18. Small Grain Production 19. Corn and Sorghum Production	ő	
20. Ansiling Corn, Grasses, Legumes	0	l
21. Logue Crop Production	0	
22. Pasture Management	%	
23. Diseasee and Insecte 24. Weed Plante and Control	ŏ	
25. Tebseco Production	0	<b> </b>
26. Small Fruits Production	<u> </u>	<del> </del>
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& MARKETING	1	j }
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31. Farm Organization 32. Farm Management (Land, Labor, and	1	1
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33. Labor Management		1
34. Marketing Problems and Practices 35. Agricultural and Related Price	1	(
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Pulvaritors, etc.) 43. Use & Care of Fertilizer Applicat-		
ors (Spreaders, Fertilizer Drills,		1
etc.)		
44. Use & Care of Planting & Seeding		1
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45. Use & Care of Weed, Insect &		į
Disease Control Equipment	.	1
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Fig. 20A. -- KNOWLEDGE

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	Mix Pards Select and Prepara Feeds		
3. :	Salect Equipment		
4.	Construct Equipment		
5.	Trast Ailments Administar Internal Owicines		.
7.	Apply External Medicines		1
8.	Use syringes, etc. Artificially Incominate		
10	Teen Broductica Records		-
11.	Register Animals and Istado		
12.	Castrate Dehorn		- '
14.	Euy and Sell		-
15.	Fit and Show		
. <u>M</u>	LANT SCIENCE (Ferm Crops)		
	Pollinats Plants	0	
17.	Propure Swedbed Apply Fertilizers, Line, etc.		-
19.	Sow or Transplant Crops		
20.	Cultivete Crops		
21.	Apply Insecticides, etc. Control Weede end Chemicals		
23.	Marvest Grains		<u>[</u>
24.	Process Silage Marvest and Cure Hey		<del> </del> -
26.	Graze Pastures		<u>[_</u>
27.	Graze Pastures Contour Areas		<u> -</u>
28.	Test Soil Identify Diseases & Insects		-
	Irrigets		<del></del>
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c. <u>!</u>	PARM BUSINESS MANAGEMENT		]
	& MARKETING		
31.	Seep and Use Farm Records	0	
	Negotiste Loans	]0 [0	ļ
	Secure Insurance Make Farm Budget	l ő	
35.	Use Labor Effectively	0	ļ
	Market Products	0	1
37.	lice Farm Indexes		1
38.	Use Farm Indexes Select and Use Cooperatives	ō	
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38. 39.	Select and Use Cooperatives	ō	
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38. 39. 40.  D. 41. 41. 42. 43. 44.	Select and Use Cooperatives Cosply with Federal Programs File Ferm Income Tax Return  AGRICULTURAL MECHANICS (Farming)  Tractor s. Operate b. Service c. Adjust d. Repair Soil Preparation Tools z. Use Properly in Field b. Adjust d. Repair d. Service Pertilizer Applicators s. Use Distributors b. Use Manure Spreaders Flanting, Seeding, Veed, Insect, Disease Control Meuispeent a. Use Row Crep Flanters b. Use Grain Drills c. Use Cultivators & Rotary Hoes d. Use Sprayers and Dusterm Marvesting Machines e. Use Mowers & Retes b. Use Mowers & Retes b. Use Malers c. Use Harvesters d. Use Combines Electric Motors (Use, Cere, etc.)  YARMISTEAD, BUILDINGS, FINCES, AND WATER SYSTEM		
38. 39. 40.  D. 41.  42.  43.  45.  45.	Select and Use Cooperatives Cosply with Federal Programs File Ferm Incose Tax Return  AGRICULTURAL MECHANICS (Farming)  Tractor s. Operate b. Service c. Adjust d. Repair Soil Preparation Tools L. Use Properly in Field b. Adjust c. Repair d. Service Fertilizer Applicators s. Use Distributors b. Use Manure Spreaders Flanting, Seeding, Weed, Insect, Disease Control Medipsent a. Use Row Crep Flanters b. Use Grain Drills c. Use Cultivators & Rotary Hoes d. Use Sprayers and Dusterm Harvesting Machines e. Use Mowers & Rekes b. Use Balers c. Use Harvesters d. Use Combines Electric Motors (Use, Cere, etc.)  FARMSTEAD, BUILDINGS, FENCES, AND WATER SISTEM  Make Flans		
38. 39. 40. 41. 41. 42. 43. 45. 45.	Select and Use Cooperatives Cosply with Federal Programs File Ferm Income Tax Return  AGRICULTURAL MECHANICS (Farming)  Tractor s. Operate b. Service c. Adjust d. Repair Soil Preparation Tools z. Use Properly in Field b. Adjust d. Repair d. Service Pertilizer Applicators s. Use Distributors b. Use Manure Spreaders Flanting, Seeding, Veed, Insect, Disease Control Meuispeent a. Use Row Crep Flanters b. Use Grain Drills c. Use Cultivators & Rotary Hoes d. Use Sprayers and Dusterm Marvesting Machines e. Use Mowers & Retes b. Use Mowers & Retes b. Use Malers c. Use Harvesters d. Use Combines Electric Motors (Use, Cere, etc.)  YARMISTEAD, BUILDINGS, FINCES, AND WATER SYSTEM		
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38. 39. 40. 41. 41. 42. 43. 44. 45. 45. 45. 50. 51. 52. 52. 53. 54. 55. 55.	Select and Use Cooperatives Comply with Federal Programs File Ferm Income Tax Return  AGRICULTURAL MECHANICS (Farming)  Tractor s. Operate b. Service c. Adjust d. Repair Soil Preparation Tools z. Use Properly in Field b. Adjust c. Repair d. Service Pertilizer Applicators s. Use Distributors b. Use Manure Spreaders Flanting, Seeding, Weed, Insect, Disease Control Equipment a. Use Row Crep Flanters b. Use Grain Drills c. Use Cultivators & Rotary Noes d. Use Sprayers and Dustern Harvesting Machines e. Use Mowers & Rekes b. Use Harvesters d. Use Combines Electric Motors (Use, Cere, etc.)  FARMSTEAD, BUILDINGS, FINCES, AND WATER SYSTEM Make Flans Use end Select Flans Use Fars Shop Rand Tools Use Fars Shop Rand Tools Use Fars Shop Rand Tools Use Fars Shop Rand Tools Harvesting Water System Maintsin Water System Construct Fences  SOIL AND SOIL MANAGEMENT  Identify Soil Characteristics Take Soil and Interpret Results	0	
38. 39. 40. 41. 41. 42. 43. 44. 45. 45. 47. 48. 49. 50. 50. 51. 52. 53. 55. 56. 57.	Select and Use Cooperatives Cosply with Federal Programs File Ferm Incose Tax Return  AGRICULTURAL MECHANICS (Farming)  Tractor s. Operate b. Service c. Adjust d. Repair Soil Preparation Tools z. Use Properly in Pield b. Adjust d. Repair d. Service Pertilizer Applicators s. Use Distributors b. Use Manure Spreaders Planting, Seeding, Weed, Insect, Disease Control Nguigment a. Use Row Crep Planters b. Use Grain Drills c. Use Grain Drills c. Use Grain Drills c. Use Grain Drills c. Use Sprayers and Dustern Harvesting Machines e. Use Mowers & Rekes b. Use Balers c. Use Harvesters d. Use Combines Electric Motors (Use, Cere, etc.)  FARMSTEAD, BUILDINGS, FINCES, AND WATER SYSTEM  Make Plans Use Farm Shop Rower Tools Install Water System Maintsin Water System Maintsin Water System Construct Fences  SOIL AND SOIL MANAGEMENT  Identify Soil Characteristics Take Soil Samples Test Soil Samples Test Soil and Interpret Results Prepare Seedbed	0	
38. 39. 40. 41. 42. 43. 44. 45. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 55. 56. 57. 58. 59. 59. 59. 59. 59. 59. 59. 59. 59. 59	Select and Use Cooperatives Cosply with Federal Programs File Ferm Income Tax Return  AGRICULTURAL MECHANICS (Farming)  Tractor a. Operate b. Service c. Adjust d. Repair Soil Preparation Tools c. Use Properly in Field b. Adjust c. Repair d. Service Fertilizer Applicators s. Use Distributors b. Use Manure Spreaders Flanting, Seeding, Weed, Insect, Disease Control Nauignent a. Use Row Crep Flanters b. Use Grain Drills c. Use Cultivators & Rotary Noes d. Use Sprayers and Dustern Harvesting Machines e. Use Mowers & Rekes b. Use Balers c. Use Horvesters d. Use Combines Flectric Motors (Use, Cere, etc.)  FARMSTEAD, BUILDINGS, FINCES, AND WATER SISTEM  Make Plans Use end Select Flass Use Farm Shop Rand Tools Use Farm Shop Power Tools Install Water System Maintain Water System Maintain Water System Maintain Water System Construct Fences  SOIL AND SOIL MANAGEMENT  Identify Soil Characteristics Take Soil Samples Test Soil Samples Test Soil Interpret Results Prepare Seedbed Apply Lime, Pertilizers, & Manure Cultivate Effectively	0	
38. 39. 40. 41. 41. 42. 43. 44. 45. 45. 50. 51. 52. 53. 53. 55. 56. 56. 56. 56. 56. 56. 56. 56. 56	Select and Use Cooperatives Cosply with Federal Programs File Ferm Income Tax Return  AGRICULTURAL MECHANICS (Farming)  Tractor s. Operate b. Service c. Adjust d. Repair Soil Preparation Tools z. Use Properly in Pield b. Adjust d. Repair d. Service Pertilizer Applicators s. Use Distributors b. Use Manure Spreaders Planting, Seeding, Weed, Insect, Disease Control Nguigment a. Use Row Crep Planters b. Use Grain Drills c. Use Grain Drills c. Use Grain Drills c. Use Grain Drills c. Use Sprayers and Dustern Harvesting Machines e. Use Mowers & Rekes b. Use Balers c. Use Harvesters d. Use Combines Electric Motors (Use, Cere, etc.)  FARMSTEAD, BUILDINGS, FRACES, AND WATER SYSTEM  Make Plans Use Farm Shop Fand Tools Use Farm Shop Fower Tools Install Water System Maintsin Water System Maintsin Water System Construct Fences  SOIL AND SOIL MANAGEMENT  Identify Soil Characteristics Take Soil Samples Test Soil samples Test Soil and Interpret Results Prepare Seedbed Apply Line, Pertilizers, & Manure Cultivate Effectively Control Frosion	0	
38. 39. 40. 41. 42. 43. 44. 45. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 55. 56. 57. 58. 59. 59. 59. 59. 59. 59. 59. 59. 59. 59	Select and Use Cooperatives Cosply with Federal Programs File Ferm Income Tax Return  AGRICULTURAL MECHANICS (Farming)  Tractor s. Operate b. Service c. Adjust d. Repair Soil Preparation Tools z. Use Properly in Field b. Adjust d. Repair d. Service Fertilizer Applicators s. Use Distributors b. Use Manure Spreaders Flanting, Seeding, Yeed, Insect, Disease Control Equipment a. Use Row Crep Planters b. Use Grain Drills c. Use Cultivators & Rotary Hoes d. Use Sprayers and Dustern Harvesting Machines e. Use Mowers & Rekes b. Use Ediers b. Use Ediers d. Use Combines Electric Motors (Use, Cere, etc.)  FARMSTEAD, BUILDINGS, FENCES, AND WATER SYSTEM Make Flans Use and Select Plans Use Farm Shop Power Tools Install water System Maintsin Water System Maintsin Water System Maintsin Water System Maintsin Water System Maintsin Water System Construct Fences  SOIL AND SOIL MANAGEMENT  Identify Soil Characteristics Take Soil Samples Test Soil and Interpret Results Prepare Seedbed Apply Line, Pertilizera, & Manure Cultivate Effectively Control Erosion Provide Adequate Drainage	0	

Fig. 20C -- RELATIVE IMPORTANCE INDEX OF TOOL USE FOR JOB TITLE

## VI. MECHANIC

			RE	LATI	VE IN	(POR	ranc	E IN	DEX	
TOOLS	0	. 2	.4	.6	8 1	.0 1	2 1	.4 1	.6 1	.8 2.
					l		1	1	<b>!</b>	<b>!</b>
Feed Canveyor										
Feed Mill						<b>.</b>				
Barn Cleaning Equipment						<b> </b>				
Transporting Equipment Sprayers and Oilers						<b> </b>				
Tractors (Plant Science)						<del> </del> -				
Land Preparation Tools						<del> </del> -				
Fertilizer Applicators						<del> </del>				
Seeding Equipment	<b></b> -									
Cultivators						]				
Insecticide Applicators		~-				<b> </b>				
Harvesters of Grain Weed Control Applicators	<b> </b>					ļ				
Silage Harvesters	·					<b>{</b> -				
Forage Harvesters	·					<del> </del>				
Irrigation Equipment	·					1				
Tractors (Agricultural Mechanics)	·					1				
Other Engines	<u> </u>					1				
Moldboard Plows				<b></b>		<b></b> _				
Disk Plows						<b></b>				
Disk Tillers Subsoilers						<b>{</b>				
Disk Harrows						<del> </del>				
Tooth Harrows	<b> </b>					ŧ				
Rotary Shredders						ŧ				
Soil Pulverizers										
Soil Packers						1				
Soil Mulchers						. <b>.</b>				
Fertilizer Distributor Manure Spreaders						· <b></b>				
Loaders						· <b>}</b> -				
Row Planters						·}				
Grain Drills						t				
Cultivators and Tillers										
Rotary Hoes						ļ				
Sprayers and Dusters	<b> </b>					. <b> </b>				
Movers Rakes						<del>-</del> }				
Balers										
Forage Harvesters						†·				
Combines						<b>†</b> -				
Special Crop Harvesters						F				
Farm Shop Hand Tools										
Farm Shop Power Tools										
Fencing Equipment Plumbing Tools						1				
Control Chute	]					†				
Production Record Books (Animal Science)						†				
Blueprints	ļ					1				
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#### RELATIVE IMPORTANCE OF COMPETENCIES FOR JOB TITLE

VII. OTHER CROP PROLUCER

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			1,2141818 2
	VLEDGE - UNDERSTANDING OF		Ì
۸. ۸	VINAL SCIENCE (Para Animals)		i
1.	Genstics of Breeding Livestock Carry Out Breeding Practices		
3.	Pasture Utilization		
	Feeding Fractices Selecting Feeds		
8.	Preparing Feed Rations		ļ
7. 8.	Dissse Prevention and Control Parasite Prevention and Control		
	Adequate Housing Requirements Correct Use of Equipment		ĺ
11.	Selecting Herd Replacements		
12.	Selecting for Sale	0	
1. 7	LANT SCIENCE (Farm Crops)		
_		l	
13. 14.			
15. 16.	Soil in Relation to Crops Retations or Crop Sequences		
17.	Cultivation		
	Small Grain Production Corn and Sorghum Productios		
20.	Ensiling Corn, Grasses, Legumes Legume Crop Production		
22.	Pasture Management		-
23. 24.	Diseases and Insects Weed Plante and Control		
25.	Tobacco Production		<del> -</del>
26.	Smill Fruit Production	-	<del></del>
c. #	ANN BUSINESS MAKAGINERT	]	ĺ
=	& MARKETING		
27.	Farm Records and Accounts		
28. 29.	Farm Record Analysis Agricultural Financing and Credit		[
30.	Agricultural Insurance		
31. 32.	Farm Organization Farm Management (Land, Labor, and		1
33.	Capital) Labor Management	}	t j
34.	Marketing Problems and Practices		
35.	Agricultural and Related Price Amalysis		
	Farm Cooperatives		<del> </del> -
37. 38.	Federal Programs Farm Income Tax Instructions		
39.	Farm Laws, Deede. Inheritances, etc		
	announder unconstant (Manufact)		
υ. χ	GRICULTURAL MECHANICS (Farming)		i l
40.	Farm Tractors & Machines (Operation, Maintenance, etc.)		
41.	Use & Care of Tillage Mquipment		1
<b>42.</b> ,	(Plows, Disks, etc.) Use & Care of Seedbed Refining		
	Mquipment (Harrows, Shredders, Pulverizers, etc.)		
43.	Use & Care of Fertilizer Appli-		
	caters (Spreaders Fertilizer Drills, etc.)		
44.	Use & Care of Planting & Seeding		
	Equipment (Row Planters, Drills, etc.)		
45.	Use & Care of Weed, Ineset & Disease Control Equipment	1	
	(Cultivators, Tillers, Moss,	L	<u>                                     </u>
46.	Sprayers, Dusters) Use & Care of Harvesting Machines		
	(Movers, Rakes, Balers, Harvesters, Combines, etc.)		
47.	Business Management of Tractors		
48.	use & Care of Electric Motors		<u> </u>
E. <u>P</u>	ARMSTEAD, BUILDINGS, FENCES, AND WATER SYSTEM		
4.5	<del></del>		
49. 50.	Planned Layouts Selecting Layout Plans		
51. 52.	Constructing Needed Equipment Maintaising Needed Equipment		
53.	Use of Farm Shop Tools		
53.	Field Layouts & Fencing Selecting Water Systems		
56. 57.	Installing Water Systems Care & Maintenance of Water System		
<u> </u>	A MUTHICA AT METGL SASCES	<del></del>	<del></del>
7. <u>s</u>	OIL AND SOIL MANAGEMENT	!	
58.	Importance of Soils		<u>L</u> 1
59.	Soil Science		<del> </del>
60. 61.	Preparing for Plants or Seeds Cultivation Practices		
62. 63.	Lining & Fertilining		
4.	Using Manures Soil Water Management		
	Costrolling Erosion Adequate Drainage		<u> </u>
67.	Irrigeting	ļ	
68.	General Farm Soil Masagement		

Fig. 21A. -- KNOWLEDGE

P PRCL"	Fig. 21B	SKILLS	
			1.2 1.4 1.8 1.8 2
	Ì	<del></del>	1.2 1.4 1.8 1.8 2
II. SK	ILL - ABILITY TO	i	
A. A	NIMAL SCIENCE (Farm Animals)		
1.	Mix Feeds		
2. 3.	Select and Prepars Feeds Select Equipment		-
4.	Construct Equipment		
5. 6.	Treat Ailments Administer Internal Medicines		
7.	Apply External Medicines		'
8. B.	Uss syringss, etc. Artificially Inseminate	0	
10. 11.	Kesp Production Records Register Animals and Tattoo		
12.	Castrets		
13 14.	Dehorn Buy and Sall		
15.	Fit and Show		
		1	
a. <u>:</u>	LANT SCIENCE (Ferm Crops)		
	Pollinats Plants Prepare Seedbed	0	
18.	Apply Fertilizers. Lime, etc.		
	Sow or Transplant Crops Cultivate Crops		
21.	Apply Insecticides, etc. Costrol Weeds and Chemicals		
23.	Marvest Grains	ļ	
	Process Silage Harvest and Curs Hay	<b></b>	
28.	Graze Pastures		
	Test Soil		
2B. 30.	Identify Diseasse & Insects Irrigate		
<u>==</u>			
C. 1	PARM BUSINESS MANAGIMENT		
-	& MARKETING		
31.			
	Negotiats Loans Secure Insurance		
34.	Make Farm Budget		
	Uss Labor Effectively Market Preducts		
	Uss Farm Indexes Select and Use Cooperatives		
33.	Comply with Federal Programs		
<u>40.</u>	Fils Farm Income Tax Return		
D. 4	GRICULTURAL MECKANICS (Farming)		
_			
41.	Tractor  a. Operate		
	b. Service c. Adjust		
40	d. Repair		
42.	Soil Preparation Tools  a. Use Properly in Field		
	b. Adjust c. Repair	ļ	
43.	Fertilizer Applicators		
	a. Use Distributors b. Use Manure Spreaders		
44.	Planting, Seeding, Weed, Insect, Disease Control Equipment	1	
	s. Use Row Crop Planters	<b></b>	
	<ul><li>b. Use Grain Drills</li><li>c. Use Cultivators &amp; Rotary Hoes</li></ul>		
45.	d. Use Sprayers and Dusters Harvesting Machines		
701	s. Use Movers & Rakes	ļ	
	b. Use Balera c. Use Marvesters		*
48.	d. Use Combines Electric Motors (Use, Care, etc.)		
===	2000 (000)		
8. <u>1</u>	ARMSTRAD, SUILDINGS, PERCES,		
	AND WATER SYSTEM		
	Make Plans		
49. 43.			
50, 51.			
52.	Maintein Water System		
33.	Construct Pences		
7. s	OIL AND SOIL MANAGEMENT		
55.	Identify Soil Characteriatics Take Soil Samples		
56. 57.	Test Soil and Interpret Results Prepare Seedbed		
58.	Apply Lime, Fertilizers, & Manurs		*
5B. 80.	Cultivate Effectively Control Brosion	***************************************	
	Provide Adequate Drainage		
<u></u>	7 rigate	***************************************	
			,



## Fig. 21C -- RELATAVE IMPORTANCE INDEX OF TOOL USE FOR JOB TITLE

### VII. OTHER CROP PRODUCER

monta	RELATIVE I	M-ORTANCE INDEX
TOOLS	0 .2 .4 .6 .8	1.0 1.2 1.4 1.6 1.8 2.
Tractors (Plant Science)		
Land Preparation Tools		
Fertilizer Applicators		
Seeding Equipment		
Cultivators		
Insecticide Applicators		
Harvesters of Grain		
Tractors (Agricultural Mechanics)	~~~~~~~~~	
Other Engines		
Moldboard Plows   Disk Plows		
Disk Tillers		
Subsoilers		
Disk Harrows		
Tooth Harrows		
Soil Packers		
Soil Mulchers		
Fertilizer Distributor		
Manure Spreaders		
Loaders Row Planters		
Grain Drills		
Cultivators and Tillers		
Rotary Hoes		
Sprayers and Dusters		
Mowers		
Rakes		
Balers		
Forage Harvesters		
Combines Special Crop Harvesters		
Soil Preparing and Cultivating Tools		
Weed Control Applicators		
Forage Harvesters		
Farm Shop Hand Tools		
Farm Shop Power Tools		************
Fencing Equipment		
Soil Sampling Yools		
Farm Record Book		1
Income Tax Forms Rotary Shredders		
Soil Pulverizers	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
Silage Harvesters		
Irrigation Equipment		
Production Record Book (Farm Bus. Mgmt. & Mkt.)		
Farm Account Book		
Plumbing Tools		
Drainage Tools	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
Irrigating Tools		
Budget Instructions Farm File System	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	•
Soil Testing Equipment		Ī
Feed Conveyor		
Feed Mill		
Control Chute		
Barn Cleaning Equipment		
Transporting Equipment		
Instruments for Injections		
Castrating	~~~~	
Dehorning Tettocing		
Tattooing Sprayers and Oilers		
Sprayers and Ollers Blueprints		
Production Record Books (Animal Science)		
Fitting and Showing		
Feet Trimming Tools		



## "VE IMPORTANCE OF COMPETENCIES FOR JOB TITLE

VIII. GENERAL FARM WORK ONLY

Fig. . 228. -- Skills

		Fig. 22A.	KNOWLEDGE	
			RELATIVE IMPO	RTANCE INDEX
		ì	<del>                                     </del>	1.2 1.4 1.8 1.8
ı.	KNO	MLEDGE - UNDERSTANDING OF	1	1
A	. <u>N</u>	HIMAL SCIENCE (Form Animals)		
	1.	Genstics of Breeding Livestock		
	2.	Carry Out Breeding Practices Pasture Utilization		
	4.	Feeding Practices		
	6.	Selecting Feeds Preparing Feed Rations		
	7.	Disease Prevention and Control		1
	₿.	Parasite Prevention and Control Adequate Nousing Requirements		
	10.	Correct Use of Equipment Selecting Herd Replacements		
		Selecting for Sale		
1				
•	. P	LANT SCIENCE (Farm Crops)		1
		Pleats and Pleat Growth		
		Classification of Crop Flants Soil in Relation to Crops		I
	16.	Rotations or Crop Sequences		1
		Cultivation Small Grain Freduction		-
1	18,	Corn and Serghum Freduction		
	21.	Essiling Corn, Grassas, Legumes Legume Crop Productios		1
į	22.	Pasture Management Disasses and Insects		·
ı	24.	Weed Flants and Centrol		·
		Tobacco Productios Small Fruits Productios		
	=			
۱ ,	:. <u>r</u>	ARM BUSINESS MANAGEMENT		1
	-	& MARKETING		Į.
		Fara Records and Accounts		l.
	28.	Fara Record Analysis Agricultural Financing and Credit		I
	30.	Agricultural Insurance		ĺ
1	31. 32.	Farm Organization Farm Management (Land, Labor, and		
		Capital)		1
	33.	Laber Management Marketing Problems and Fractices		1
	34. 35.	Agricultural and Related Price	ļ	
	38.	Analysis		
	37.	Federal Programs		ļ
	38. 38.	Farm Income Tax Instructions Farm Laws, Deeds, Inheritances. etc		
	_			
	D. 4	AGRICULTURAL NECHANICS (Farming)		
	40.	Fars Tractors & Machines		
		(Operation, Maintenance, etc.)		
	41.	(Plevs, Disks, etc.)		
	42.	Use & Care of Seedbed Refising	1	
4		Equipment (Harrows, Shredders, Fulverizers, etc.)		
1	43.	Use & Care of Fertilizer Applicator (Spreaders, Fertiliser Drills, etc.	B  	
	44.	Ose & Care of Plasting & Speding	Ί	1
1		Mquipment (New Flanters, Drills, etc.)		
	45.	Use & Care of Wood, Issect &		1
1		Disease Centrol Equipment (Cultivators, Tillers, Hoes,		
	46.	Sprayers, Dusters)		
1	٠	(Movers, Rakes, Balers, Harvesters,	·	
	47.	Cestines, stc.)  Business Management of Tractors		
		and Machinery		
	48.	Use & Cars of Electric Motors		
		PARMSTRAD, SUILDINGS, PENCES,		
	E.	AND WATER SYSTEM	1	i l
1	48.	<del></del>		ļ
-	50,	. Selecting Layout Flans		l
1	51 . 52 .			
	53 .	. Use of Fara Shop Tools		
1	54, 55,			
	56	. Isstalling Water Systems		<del> -</del>
	51.	. Care & Maistenance of Water System		<del> </del>
		SOIL AND SOIL MANAGEMENT	ļ	<b> </b>
	58 58			
- 1	80	. Preparing for Plasts or Seeds		
·	81 82			
	83	. Using Masures		
Į	84 85	. Seil Water Management		
	68	, Adequate Drainage		
	67 88			
- 1		. Odiniki tata seri mandenes		

		BET ATTWE THE	ORTANCE INDEX
			1.2 1.4 1.6 1.8
	i	1-1-1-1	
I. SKI	LL - ABILITY TO		
A. A	(IMAL SCIENCE (Form Animals)		
-			
1.	Mix Feeds Schect and Prapare Feeds		
3.	Salect Equipment		
4.	Construct Equipment		
٠.	Prest Allments Administer Internal Medicines		
7.	Apply External Medicines		
8.	Uss syringes, etc.		
	Artificially Isseminate Keep Projuction Records		
11.	Register Animals and Tattoe		
12.	Castrate		
13.	Dehorn Buy and Sall		
15.	Fit and Show		
====			
	TANK COTTACE (Fam. Cross)		
B. <u>F</u>	LANT SCIENCE (Farm Crops)		
16	Follinate Plants	<del>}</del>	
17.	Prepare Seedbed		
18. 18	Apply Fertilisers, Line, etc. Sow or Transplant Creps		
20.	Cultivate Crops		
21.	Apply issecticides, etc.		
22.	Costrol Waeds and Chemicals Marvest Grains		
24.	Process Silage		ļ.
25.	Marvest end Cure May		1
28.	Grase Pastures		T
	Contour Aress Test Soil		
28.	Identify Diseases & Issects		1
	Irrigate		<del> </del>
		ł	
c. I	PARM BUSINESS MANAGEMENT		1
-	AND MAR SETING		
31.	Keep and Usa Farm Records		İ
	Negetiste Losns		i <sup>t</sup>
33.	Secure Insurance		
	Make Farm Budgst		L
	Uss Labor Effectively Market Products		
37,	Use Ferm Indexes		
	Select and Use Cooperatives		
40.	Comply with Federal Frograms File Form Income Tax Return		İ
<u>==</u>			
	ACREAGE STREET WINNESS (Page 1 a.)	1	i
υ	AGRICULTURAL MECHANICS (Forming)		
41.	Tractor	1	ļ
	a. Operate b. Service		i
	c. Adjust		
	d. Repair		<del></del>
42.	Soil Preparatios Tools	L	
	a. Use Properly in Field b. Adjust		<b>!</b>
	c. Repair		
	d. Service		
43.	Fertiliser Applicators s. Use Distributors		
	b. Usa Masure Spraaders		
44.	Plen'ing, Seeding, Weed, Insect,		1
	Dir a se Control Equipment s. Fise Now Crop Planters		
	b. Use Grain Drills		
	c. Use Cultivators & Rotary Hoes		1
45.	d. Use Sprayers and Dusters Marvesting Machines		
45,	s. Uss Movers & Rakes		1
	b. Use Balers		1
	c. Use Harvesters d. Use Combines		
48.			<u> </u>
_			
E.	FARMSTEAD, BUILDINGS, FENCES,		1
	AND WATER SYSTEM		1
	<del></del>		
	Make Flans Use and Select Flans		.}
	Use Form Shep Hand Tools		-1
50.	Use Farm Shop Power Tools		
	Install Water System		
54. 53	Maintsin Water System Gonstruct Pences		
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	SUL TAN COST MENTERS		1
<b>"</b>	SOIL AND SOIL MANAGEMENT	1	1
54.			
55,	Take Soil Samples		
	Test Soil and laterpret Results		
	. Prepare Seedbed . Apply Lime, Fertilisers, & Manure		
58,	Cultivate Effectively		
	Costrol Erosion		
. =1	Provide Adaquate Drainage		
	. IPPIESTO		
	. Irrigate		

Fig. 22C -- RELATIVE IMPORTANCE INDEX OF TOOL USE FOR JOB TITLE

## VIII. GENERAL FARM WORK ONLY

Seeding Equipment				RE	LAT I	VE IM	PORT	ANCI	E INDE	X	
Tractors (Plant Science) Soil Preparing and Cultivating Tools Cultivators Cult	TOOLS	ο.	2	. 4	.6	8 1.	0 1	2 1	.4 1.0	<u>61.</u>	8 2.
Soll Preparing and Cultivating Tools Cultivators Seeding Ruipment Partilizer Applicators Land Preparation Tools Weed Control Applicators Insecticide Applicators Soll Testing Ruipment Drainage Tools Syll Sambling Tools Farm Shop Hand Tools Ilburyning Irrigating Tools Farm Shop Hand Tools Ilburyning Irrigating Tools Farm Shop Hand Tools Ilburyning Barvestern of Grain The Control of Control Barvestern of Grain Promoting Engipment Deborning Castrating Farm Shop Power Tools Sprayers and Cilers Forage Harvestern Forage Harvestern Forage Harvestern Forage Harvestern Forage Harvestern Forage Harvestern Forage Harvestern Fred Conveyor Instruments for Injections Fred Mill Production Record Books (Animal Science) Production Record Books (Farm Bus. Mgat. & Mat.) Silage Barvestern Fancing Squipment Income Tax Forms Tatwooing Farm Account Book Fort Trimming Tools Fore Trimming Tools Office Machines Office Machines Office Machines Office Machines Office Machines Tools Harrows Tools					T				Ti		
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Seeding Duipment Fertilizer Applicators Land Preparation Tools Weed Control Applicators Land Preparation Tools Weed Control Applicators Insecticide Applicators Soil Testing Duipment Drainings Tools Farm Shop Hand Tools Silverints Irrigating Tools Harvesters of Grain Control Control Benr Cleaning Equipment Benr Cleaning Equipment Benr Cleaning Equipment Benr Cleaning Equipment Benr Cleaning Equipment Benrang Control Syrayers and Gilers Syrayers and Gilers Farm Shop Hand Fools Syrayers and Gilers Farm Shop Present Fools Syrayers and Gilers Farm Shop Present Fools Syrayers and Gilers Farm Shop Present Fools Syrayers and Gilers Farm Shop Fools Farm Shop Fools Syrayers Fools Syrayers Fools Syrayers Factor Fools Farm Shop Fools Fools Farm Shop Fools Farm Shop Fools Fools Farm Shop Fools Fools Farm Shop Fools											
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#### CHAPTER IV

#### SUMMARY

EMPLOYMENT OPPORTUNITIES AND COMPETENCIES NEEDED IN FARM OCCUPATIONS IN SELECTED COUNTIES IN KENTUCKY

The objective of this study was to secure, by personal interview with the farm operators in 11-selected counties in Kentucky, information that will identify the present and emerging farm occupations and competencies for each occupation.

The assumptions were: (1) that the farm operators of the farm businesses that are above the 1964 mean farm acreage size could give an adequate description of competencies needed by the farm employees under their supervision, (2) farm coerator would indicate the relative importance of each competency to the identified on-farm occupations, and (3) that the farm operators would give adequate information of present number of employees and projected number needed by 1972.

The data for the study was secured by teachers of agriculture using a personal field survey interview. Thirteen per cent of farms in the study were included in the sample. There are 3,810 farms in the survey population. The number of farms identified by the random sampling procedure and, therefore, included in the survey is 517.

## Farms and Farm Operators

The e,810 farms in the study are managed by 2,402 farm operators. Fifty-six per cent of the farm operators operate more than one farm. Slightly more than 75 per cent of operators interviewed are operatorowner living on a farm. The operators' ages range from 20 to 88.

Thirty-four per cent have completed high school, 18 per cent of the operators responding completed some education beyond high school and 8 per cent completed four years of college. The summarization indicates that 49.2 per cent of the operators manage 151 to 300 acres, 0.6 per cent manage units less than 100 acres, and 4 per cent of the operators manage units over 1,000 acres. The on-farm position of operators in the 11-county area study is:

Position	Number in the Position
Owner living on farm	1511
Not owner living on farm	343
Owner living off farm	307
Not owner living off farm	204
No Responses	37
Total	2402

The ages of farm operators in the area included in this report are:

Range of Ages	Number in the Range
20 - 30	190
31 - 40	365
41 - 50	628
51 - 60	679
61 - 70	336
71 - 80	124
81 <b>-</b> up	22
No Responses	58
Total	2402



The number of years the operators in this study has been a farm operator is:

Number of Years as a Farm Operator	Number of Operators
1 - 10	562
11 - 20	555
21 - 30	555
31 - 40	307
41 - 50	168
51 - 60	15
61 - 70	7
71 - 80	7
No Responses	226
Total	2402

The farm operators were asked by interviewers to indicate their outlook for the future of farming. The summation is:

Outlook for the Future of Farming	Number of Operators
Excellent	606
Good	1307
Poor	263
No Responses	226
Total	2402

## Farm Employees

When returns from the sampled farms are projected in the 3,810 farms of above-median size included in the 11-county area the number of employees that are identified by the following divisions are:



Division	Number in Population
Number employed full time	3351
Number employed more than one-half time	248
Number employed less than one-half time	832
Number family workers not included above  lotal	÷628 5059

The farm employees were classified by the respondent during the interview and the summarization revealed this information:

Job Title	Number in th	ne Population of inployees by Job Titles
and the second s	1967	1972 (Projected)
Operator-not owner	577	533
Operator-owner	1424	1606
Foreman ·	161	146
Livestock herdsman	37	29
Tobacco producer	88	138
Agricultural mechanic	22	22
	110	29
Other crop producer General farm worker	701	985

The estimated job title median turnover by occupation is:

Job Title	Number of Years
Operator-owner Operator-not owner Livestock herdsman Foreman Other crop producer General farm worker Tobacco producer	20 20 20 16 6-7 6-7 4



A summary of indications for formal education needed by job titles indicates the median for each to be 12 years.

## Relative Importance of Competencies

The relative importance of competencies was determined from the information that the 329 farm operators provided. The operators rated each competency either necessary, desirable or not necessary. The factors for rating are 2.0 for necessary, 1.0 for desirable, and 0.0 for not necessary.

An index, for the purpose of this study, was calculated. The method thod for calculating the relative importance index consisted of counting the number of respondents who indicated that they considered the competency to be either necessary, desirable or not necessary. The number of responses was multiplied by a factor of two, the number of desirable responses was multiplied by a factor of one, and the number of not necessary responses was multiplied by a factor of zero. The three products thus obtained were summed and divided by the number of respondents. This yielded an index of importance for a single competency.

The relative importance index for the competencies are presented in the following summaries for each subject matter area. The first summary indicates the relative importance index for the competencies in the six subject matter areas. The summary has grouped the competencies in knowledges, skills, and tools used. The value of each learning to the designated farm occupation is indicated with the relative importance index. The summary provides the mean for each competency to the farm occupations.



## RELATIVE IMPORTANCE INDEX OF COMPETENCIES IN A N I M A L S C I E K C E FOR EACH OCCUPATION

COMPETENCIES - Knowledge, Skills, and Tools Used	RELATIVE IMPORTANCE INDEX								
KNOWLEDGE ANIMAL SCIENCE	1	2	3 1	C cupa 1	ions-S	6	tnote 7	8	М
1. Genetics of Breeding Livestock	1.4	1.4	1.0	1.3	.8	.0	.3	.7	.9
2. Carry Out Breeding Practices	1.5	1,6	1.3	1.6	.6	2 0	.5	.8	1.2
3. Pasture Utilization	1.6	1.8	1.9	1.4	.8	2.0	.5	.8	1.4
4. Feeding Practices	1.6	1.8	1.4	1.8	.8	2.0	.5	.8	1.4
5. Selecting Feeds	1.7	1.7	1.4	1.2	.8	1.0	.5	.9	1.1
6. Prepacing Feed Rations	1.4	1.5	1.1	1.3	.9	1.0	.5	. 9	1.0
7. Disease Prevention and Control	1.5	1.8	1.3	1,9	.9_	1.0	.5	1.0	1.2
8. Parasite Prevention and Control	1.5	1.7	1.3	1.9	.8	1.0	.5	.9	1.2
9. Adequate Housing Requirements	1.3	1.6	1.3	1.0	. 5	1.0	.3	.8	10
10. Correct Use of Equipment	.5	1.7	1.4	1.6	.9	1.0	.8	1 3	1.1
11. Selecting Herd Replacements	.3	1.8	1.0	1.2	.7	1.0	.3	.7	.9
12. Selecting For Sale	.6_	1.7	1.0	1.2	.7	1.0_	.0	.7	. 9
SKILL ANIMAL SCIENCE	<u> </u>								
13. Mix Feeds	1.1	1.3	1.3	1.2	.9_	1.0	.5	1.0	1.0
14. Select and Prepare Feeds	1.3	1.4	1.3	1.6	.6	1.0	.5	.8	1.0
15. Select Equipment	1.5	1.6	.9	1.1	.8	1.0	.5_	.7	1.0
16. Construct Equipment	1.3	1.5	1.0	1.2	1.2	2.0	.5	1.2	1.2
17. Trest Ailments	1.3	1.5	1.2	1.7	.8	1.0	.5	1.0	1.1
18. Administer Internal Medicines	1.1	1.3	1.1	1.7	.7	1.0	.5	.9	1.0
19. Apply Externsl Medicines	1.3	1.5	1.3	1.9	.8	1.0_	.5	1.0	1.1
20. Use Syringes, Etc.	1.2	1.5	1.1	1.4	.4	1.0	.3	1.1	1.0
21. Artificislly Inseminate	.2	.5	.3	.8	.2	1.0	.0	.3	.4
22: Keep Production Records	1.4	1.7	1.2	1.4	.8	1.0	.3	.7	1.0
23. Register Animals and Tattoo	.6	_` _	.9	1.2	2	1.0	.3_	.6	.7
24. Csstrate	1.5	1.6	1.3	1.3	.9	1.0	.5	1.3	1.1
25. Dehorn	1.3	1.4	1.2	1.4	.8	1.0	.5	1.2	1.1
26. Buy and Sell	1.5	1.7	1.0	1.2	.7	1.0	.3	.6	1.0
27. Fit and Show	.4	.6	.6	1.0	.2	1.0	.3	.3	.5
TOOLS USED ANIMAL SCIENCE	<u> </u>						<u> </u>		
28. Feed Conveyor	1.0	1.3	1.2	1.7	.9	2.0	.5	1.1	1.2
29. Feed Mill	.9	.9	1.0	1.7	.8	2.0	.5	.9	1.0
30. Control Chute	1.3	1.5	1.5	1.6	1.0	1.0	,5	1.4	1.2
31. Production Record Books	1.4	1.6	1.3	1.4	6_	1.0	.3	.9	1.0
32. Barn Cleaning Equipment	1.3	1.4	1.2	1.6	1.0	2.0	.5_	1.3	1.2
33. Transporting Equipment	1.4	1.5	1.3	1.3	.9	2.0	.5	1.3	1.2
34. Instruments for Injections	1.2	1.4	1.1	1.4	.5	0	.5	1.0	.8
35. Csstrating	1.4	1.6	1.2	1.2	.6	.0	.5	1.2	9_
36. Dehorning	1.3_	1.4	1.1	1.4	.6	.0	.5	1.2	.9
37. Tattooing	.6	.8	.9	1.0	.1	.0	.5	.6	.5
38. Fitting and Showing	.4	.4	.5	.8	.1	.0	.3	.4	3
39. Sprayers and Oilers	1.4	1.5	1.4	1.8	.7	2.0	.5	1.8	1.3
40. Feet Trimming Tools	.7	.9	.6	1.0	.2	.0	.3	.5	.5

<sup>1.</sup> Operator-Not Owner
2. Operator and Owner

4. Livestock Herdsman M-Mean of the Relative Importance Indeces of the occupation in each competency



<sup>3.</sup> Foreman

<sup>5.</sup> Tobacco Producer
6. Agricultural Mechanics
7. Other Crop Producer
8. General Farm Work Only

## RELATIVE IMPORTANCE INDEX OF COMPETENCIES IN P L A N T S C I E H C E FOR EACH OCCUPATION

COMPETENCIES - Enowledge, Skills, and Tools Used	RELATIVE IMPORTANCE INDEX Occupations—See Footnotes								
KNOWLEDGE PLANT SCIENCE	1 1	2_	3 ]	Occup 4	ations 5	6	7	8	M
41. Plants & Plant Growth	1.7	1.7	1.4	1.2	1.9	.0	1.5	.8	1.2
42. Classification of Crop Plants	1.7	1.5	1.3	.7	1.4	.0	1.3	.9	1.1
43. Soil in Relation to Crops	1.7	1.7	1.3	.6	1.6	.0	1.3	.9	1,1
44. Rotations or Crop Sequences	1.8	1.7	1.3	.8	1.5	.0	1.5	.9	1.1
45. Cultivation	1.9	1.8	1.6	.6	1.9	1.0	2.0	1.4	1.5
46. Small Grain Production	1.7	1.7	1.2	.6	1.5	.0	2.0	1.1	1.1
47. Corn & Sorghum Production	1.8	1.7	1.5	.8	1.3	.0	2.0	1.2	1.2
43. Ensiling Corn, Grasses, Legumes	1.0	1.2	1.0	1.0	.9	.0_	1.3	.8	.9
49. Legume Crop Production	1.6	1.7	1.4	.4	1.3	_0.	1.8	.9	1.1
50. Pasture Management	1.6	1.8	1.4	1.2	1.2	.0	1.0	1.0	1.1
51. Diseases & Insects	1.8	1.8	1.4	1.2	1.9	.0	1.8	1.0	1.3
52. Weed Flants & Control	1.8	1.8	1.5	1.0	1.9	.0	2.0	1.0	· 1.3
53. Tobacco Production	1.4	1.5	1.2	.3	1.9	.0	1.0	1. 2	10
54. Small Fruits Production	.4	.6_	.4	.4	.8	.0	. 5	.4	.4
SKILL PLANT SCIENCE									
55. Pollinate Plants	.5	.6	.3	.1	.3_	.0	.0	.3	2.7
56. Prepare Seedbed	1.9	.8_	1.6	.8	1.9	.0	2.0	1.7	1.3
57. Apply Fertilizers, Lime, Etc.	1.9	1.8	1.6	• .8	1.7	1.0	2.0	1.6	1.5
58. Sow or Transplant Crops	1.9	1.8	1.5	.9	1.9	2.0	2.0	1.6	1.7
59. Cuitivate Crops	1.9	1.8	1.6	.7	1.9	2.0	2.0	1.6	1.6
GO. Apply Insecticides, Etc.	1.8	1.7	1.4	.7	1.6	2.0	2.0	1.6	1.6
61. Control Weeds with Chemicals	1.7	1.7	1.3	. 8	1.6	2.0	1.8	1.4	1.5
62. Harvest Grains	1.9	1.8	1.6	.8	1.3	1.0	2.0	1.5	1.4
63. Process Silage	.9	1.0	1.0	1.1	.4	1.0	1.3	.8	.9
64. Harvest and Cure Hay	1.6	1.7	1.6	1.0	1.5	1.0	1.8	1.4	1.4
65. Graze Pastures	1.6	1.7	1.4	1.1	1.0	1.0	.8	1.1	1.2
66. Contour Areas	1.2	1.4	1.0	.4	1.4	1.0		.7	.9
67. Test Soil	1.0	1.0	.8	.3	.9	1.0	1.3	1.5	.8
68. Identify Diseases & Insects	1.6	1.6	1.2	1.0	1.6	1.0	1.5	.9	1.3
69. Irrigate	1.5	.8	.6	1.3	.9	1.0	1.3	.4	.9
TOOLS USED PLANT SCIENCE			<u> </u>	<u> </u>			ļ		
70. Tractors	1.9	1.8	1.7	1.2	2.0	2.0	2.0	1.7	1.7
71. Land Preparation Tools	1.9	1.8	1.6	.9	1.8	2.0	2.0	1.6	1.7
72. Fertilizer Applicators	1.8	1.5	1.4	1.0	1.5	2.0	2.0	1.6	1.6
73. Seeding Equipment	1.9	1.7	1.6	1.0	1.8	2.0	2.0	1.6	1.7
74. Cultivators	1.9	1.7	1.6	.8	1.9	2.0	2.0	1.7	1.6
75. Insecticide Applicators	1.7	1.5	1.3	1.0	1.7	2.0	2.0	1.5	1.5
76 Weed Control Applicators	1.7	1.5	1.2	.8	1.7	2.0	1.8	1.5	1.5
77. Harvesters of Grain	1.8	1.6	1.4	.8	1.0	2.0	2.0	1.4	1.5
78. Silage Harvesters	.9	.9	1.0	1.1	.5	2.0	1.3	.8	1.0
79. Forage Harvester,	1.3	1.3	1.1	1.0	.9	2.0	1.8	1.1	1.3
80. Irrigation Equipment	.5	.6	.4	.6	.7	2.0	1.3	.4	.8

7. Other Crop Producer 1. Operator-Not Owner 3. Foreman 5. Tobacco Producer 7. Other Crop Producer 2. Operator and Owner 4. Livestock Herdsman 8. Agricultural Mechanics 8. General Farm Work Only

M-Mesn of the Relative Importance Indeces of the occupation in each competency

# RELATIVE IMPORTANCE INDEX OF COMPETENCIES IN FARM BUSINESS MANAGENENT AND MARKETING FOR EACH OCCUPATION

COMPETENCIES - Knowledge, Skilla and Tools Used	RELATIVE IMPORTANCE INDEX Occupationa-See Footnotes								
KNOWLEDGE FARM BUSINESS MANAGEMENT & MARKETING	1	2	3	4	5	6	7	8	M
81. Farm Records and Accounts	1.8	1.8	1.4	1.6	1.4	1.0	.8	.6	1.3
82. Farm Record Analysis	1.4	1.5	1.4	1.2	.8	1.0	.8	.5	1.07
83. Agricultural Financing and Credit	1.6	1.7	1.3	.9	1.3	1.0	.8	.5	1.13
84. Agricultural Insurance	1.5	1.6	1.0	.9	1.3	1.0	1.2	.6	1,13
85. Farm Organization	1.6	1.6	1.6	1.1	.9	1.0	.8	.7	1.16
86. Farm Management (Land, Labor, & Capital)	1.9_	1.9	1.4	1.3	1.3	1.0	1.0	.8	1.32
87. Labor Management	1.7	1.8	1.6	1.2	1.5	0	1.0	1.0	1.22
88. Marketing Problems & Practices	1.7	1.7	2.4	1.1	1.3	.0	1.3	.6	1.13
89. Agricultural & Related Price Analysis	1.3	1.3	1.2	.8	.5	.0	.8	.5	80
90. Farm Cooperatives	1.4	1.4	1.1	7	.9	. ე	1.0	.5	.89
91. Federal Programs	1.5	1.7	1.3	1.0	1.2	.0	.8	.6	1.01
92. Farm Income Tax Instructions	1.6	1.7	1.3	1.0	1.2	.0	1.5	.6	1.11
93. Farm Law, Deeds, Inheritance, Etc.	1.4	1.5	1.0	.9		.0	3	5	.81
SKILL FARM BUSINESS MANAGEMENT & MARKETING	4								
94. Keep and Use Farm Records	1.9	1.8	1.4	1.3	1.2	.0	1.5		1.22
95. Negotiate Loans	1.6	1.6	1.0	.8	.9	.0	.8	.4	.88
96. Secure Insurance	1.6	1.7	1.1	.9	1.4	.0	.3	.7	.96
97. Make Farm Budget	1.6	1.6	1.1	.8	.9	.0	1.0	.7	. 96
98. Use Labor Effectively	1.8	1.8	1.7	1.4	1.5	.0	1.8	1.3	1,41
99. Market Products	1.8	1.8	.7	1.2	1.5	.0	1.8	1.0	1.22
100. Une Farm Indexen	1.1	1.2	1.2	.7	.3	.0	1.0	.5	.75
101. Select and Use Cooperatives	1.3	1.3	1.0	.7	.7	.0	1.5	.5	.87
102. Comply with Federal Programs	1.4	1.6	1.4	4	1,5		1.3	.7	
103. File Farm Income Tax Return	1.5	1.4	1.0	.9	.5	.0	1.5	.5	.91
TOOLS USED FARM BUSINESS MANAGEMENT & MARKETIN	<u>d</u>	-	-			-	-	-	
104. Production Record Books	1.7	1.7	1.4	1.3	1.5	0.	1.3	.9	
105. Office Machines	.8	1	1	.4	.4		1	.5	. 46
106. Budget Instructions	1.2	1.3	.9	.7	.9			.3	
107. Farm Record Book	1.8	1.7	1.3	1.6				.6	1.17
108. Farm Account Book	1.6			1.1				.6	
109. Farm File System	1.3	1.2	1.1					.3	
110. Income Tax Forms	1.6	1.6	1.2				1.5		1.11

M-Mean of the Relative Importance Indecea of the occupation in each competency

<sup>1.</sup> Operator-Not Owner 3. Fereman 5. Tobacco Producer 7. Other Crop Producer 2. Operator and Owner 4. Livestock Herdsman 6. Agricultural Mechanics 8. General Farm Work Only

## EMATIVE IMPORTANCE INDEX OF COMPETENCIES IN A G E I C U L T U E A L H E C E A H I C E FOR MACE OCCUPATION

COMPETENCIES - Knowledge, Skills, and Toole Used	RELATIVE IMPORTANCE INDEX									
	Occupations-See Footnotes									
EMOVILEDGE AGRICULTURAL MICHANICS	• †	2				1.0	$\neg$	-		.60
111. Fars T. actors & macuzines topers		1.9	1.7	1.8	1.9		$\neg$		一	.61 ,
112. Use & Care of Tillage Equipment (Plows, Disks, Etc.)	1.8	1.9	1.6		1.9	2.0	<del>'   *</del>	+	~	
113. Use à Cars of Seedbed Refining Equipment (Harrows, Shredders, Pulverizers, Etc.)	1.8	1.9	1.8		1.9	2.0	0 2.	.0 1	.2 1	.69
The A Come of Portilizar Applicators	1.8	1.8	1.7		1.9	2.0	0 3	.0 1	.3	. 67
The A Care of Planting & Seeding Equipment	1.8	1.9	1.9	1.3	1.8	2.	9 2	.0 1	1.5	L.79_
The Man & Come of Ward Insect & Disease Costrol Equipment	1.8	1,8	1.7	1.0	1.9	1.	0 2	.0 7	1.0	1.82
	1.8	1.8	1.7	1.4	1.4	12.	0 2	.0	.7	1.60
	1.8	1.7	1.4	1.1	1.4	2.	0 1	.3	-7	1.42
119. Use & Cars of Electric Motors	1.5_	1.5	1.3	1.0	1.1	1.	0 1	.0		1.18
SKILL AGRICULTURAL MECHANICS			<u> </u>	┿	┼-	+-	+	-+	$\dashv$	
120. Tractor:		1.6	1.5	1.0	1.0	, 2	.0 2			1.67
a. Overate	1	1	1 1	1 4	11.0	1 1 2.	.0 12	1.8		1.69
c. Adjust d. Repair	1.6	1.5	1.4	1.4	1.3	2	.0 1		1.2	1.45
121. Soil Preparation Tools:					١.,	.   .	.   .		1.3	1.68
a. Use Properly in Field	1.9	1.8	1.7		1.1	12	.0 13	2.0	1.2	1.87
b. Mjust c. Repair	1.7	1.6	11.5		1.0	6 2		1.5	1.5	1.50
d. Service	† <u> </u>	† <del>"</del>	T	一 <sup>"</sup>	,	1				
122. Fertiliss Applicatora: a. Use Distributors	1.7	1.7	1.3	<u>با ا</u>	1.	<u>.   2</u>		2.0	. <u>6</u>	1.56
b. Use Manure Spreaders	1.6	1.7	1.5	1.0	1.	+2		**-		
123. Flanting, Seeding, Weed, Insect Disease Control Equip.	1.0	1.8	1.3		5 - 1.			2.0	1.7	1.62
a. Use Row Crop Planters b. Use Grain Drills	1.8	1.7	1.	7	5 , 1. 5 1.			2.0	1.1	1.49
c. Use Cultivators & Rotary Hoss d. Use Sprayers and Dusters	1.8	1.6	1.		5,1.			2.0	.5	1.42
	1.7		1	3 1.	o <sup>1</sup> .			1.8	.5	1.36
124. Marvesting Machines a. Use Movers & Rakes	1.7	11.6	1.	4 1.	0 .		2.0	1.8	.5	1.33
b. Use Balers c. Use Marvestars	1.6	1.5	1.	2 1.	0		2.0	2.0	.5	1.33
125. Electric Hotors (Use, Care, Etc.)	1.3	1.0	<u>.   .</u>	7   -	4	5 2	2.0	1.3	.3	.93
TOOLS USED AGRICULTURAL MECHANICS						_				
	1.9	1.7	, 1.	4 1.	5 1	.6	2.0	2.0_	.5	1.57
128, Tractors	1.6	$T_{1}$	. 1.	1 1.	3 1	.1 ]	2.0	2.0	.4	1.36
127. Other Engines	1.0	1	$\top$	.3	6 1	.6	2.0	2.0	.5	1.42
128. Helébosré Plows	$\neg$	1.	$\top$			$\neg \vdash$	2.0	2.0	.5	1.22
120. Disk Flows	$\neg$	$\top$				-	$\neg \neg$	2.0	.4	1.27
180. Disk Tillers	1.5	1.			.8 1	$\neg \uparrow$	2.0			1.05
191. Subscilers	1.1	1.		$\neg \top$			2.0	2.0	.2	1.40
132. Disk Marrows	1.0	1.	6 1	.2 1	.0 1	.6	2.0	2.0	.5	
133. Toeth Marrows	1.4	1.	2 1	.0 1	<u>.2 1</u>	.2	2.0	2.0	.5	1.39
134. Rotary Shredders	1.5	<u>, 1.</u>	2	٠.	.8	<u>.</u>	2.0	1.5	.2	1.12
135. Soil Pulverizers	1.	<u> 1.</u>			.8 1	.2	2.0	1.5	.2	1,09
	1.4	1.	2 1	.0 1	.0 1	.4	2.0	2.0	.3	1.21
138. Soil Packers	1.		•		.6 2	1.2	2.0	2.0	1 1	1.13
137. Soil Mulchers	1.	$\neg$	$\neg \vdash$		.0	$\neg \neg$	2.0	2.0	.5	1.44
138. Fertilizer Dist.		$\top$	$\neg \vdash$	2		$\neg \neg$	2.0	2.0	.5	1.40
139. Manure Spranders	1.		T					$\Box$	1	1.30
140. Loaders	1	4   1	.4	1.1	1.1					1.4
141. Now Flanters	1	9 1		1.4	.8 :	1.1	2.0	T	$\top$	+
142. Grain Drills	_ 1	. 1		1.3	.8]	1.1	2.0	2.0	.5	1.3
143. Cultivators and Tillers	1	. 1		<u> 1,4 :</u>	.•	1.5	2.0	2.0	.5	T
	1	. 1	1,3	1.2		1.1	2.0	2.0	.3	1.2
144. Rotary Hoes	1	.7 ]	1.5	1.2	1.0	1.2	2.0	2.0	.5	1.3
145. Sprayers and Dusters	一				$\neg$	1.1	2.0	2.0	.5	1,4
148. Nowers				$\vdash$	1,0	.,	2.0	7-	1	
147. Rakes	<del>-  1</del>	.8   7	-		$\neg \tau$	<del>.</del> 7	Ī		1	
147, MALUS	•				1.0	7	2.0	2.0	, , ,4	+**3
148. Balers		.•	1.5		$\neg$		Т	$\top$		1.
	_		1.5	1.0	.8	.•	Т	$\top$	$\top$	1
148. Balors		.2			$\neg$		2.0	2.0		$\top$

<sup>1.</sup> Operator-Not Owner 3. Foreman 5. Tobacco Producer 7. Other Crop Producer 2. Operator and Owner 4. Livestock Merdsman 6. Agricultural Mechanics 0. General Farm Work Only

M-Mean of the Relative Importance Indecss of the occupation in each competency



O

# PRIATIVE IMPORTANCE INTEX OF COMPETENCIES IN FARMSTEAD BUILDINGS, FENCES, AND WATER SYSTEM FOR EACH OCCUPATION

COMPETENCIES - Knowledge, Skills, and Tools Used	RELATIVE IMPORTANCE INDEX										
FARMSTEAD BUILDINGS, FENCES,	Occupations-See Footnotes										
KNOWLEIGE AND WATER SYSTEM	1	2	3	4	5	_6	7	8	K		
	1.5	1.6	1.3	1.0	1.1	1.0	3	.8	1.07		
152. Planned Layouts	1.5	1,5	1.2	.9	.7	1.0	.3 _	.7	.97		
153. Selecting Layout Plans	1.6	1.6	1.3	1.3	.5	2.0	1.5	1.4	1.40		
154. Constructing Needed Equipment			1.7	1.4	1.6	2.C	1.5	1.5	1.65		
155. Maintaining Needed Equipment	1.7	1.8	1.7								
156. Use of Farm Shop Tools	1.7	1.8	1.7	1.4	1.9	2.0	1.8	1.6	1.74		
157. Field Layouts & Fencing	1.7	1.8	1.5	.9	1.2	1.0	.8	1.3	1.27		
158. Selecting Water Systems	1.5	1.5	1.1	.9	1.1	1.0	.8_	1.0	1.11		
159. Installing Water Systems	1.1	1.2	.9	.9	2.1	1.0	.8	1.0	1.00		
	1.4	1.6	1.4	1.1	1.2	1.0	.8	.3	1.10		
160. Care & Maintenance of Water Systems FARMSTEAD BUILDINGS, FENCES,							1				
SKILL AND WATER SYSTEM			-			-			1.09		
161. Make Plans	1.6	1.6	1.2	.9	1.1	1.0	.8	.5_			
162. Use and Select Plans	1.6	1.7	1.4	1.0	1.2	1.0	.5	.9	1.16		
163. Use Farm Shop Hand Tools	1.7	1.8	1.6	1.5	1.9	2.0	1.8	1.1	1.67		
164. Use Farm Shop Power Tools	1.6	1.7	1.5	1.5	1.6	2.0	1.8	1.3	1.62		
165. Install Water System	1.1	1.1	1.0	1.0	.9	2.0	.8	1.5	1.1		
166. Maintain Water System	1.4	1.5	1.5	1.4	1.4	2.0	.8_	1.4	1.4		
167. Construct Fences	1.6	1.8	1.7	1.5	1.6	2.0	.5	1.7	1.5		
FARMSTEAD BUILDINGS, FARCES,							<u> </u>				
	.9	1.0	1.0	.9	.9	1.0	. 5	1.4	.9		
168. Blueprints	1.7			1.5	1.8	2.0	1.8	1.4	1.7		
169. Farm Shop Hand Tools		1			1.7		1.8	1.2	1.6		
170. Farm Shop Power Tools	1.7						1	.8	1.8		
171. Fencing Equipment	1.6	1.7	1.7	1	1.5		1.8	+-	1.2		
172. Flumbing Tools	1.2	1.2	1.2	.9	1.3	2.0	1.3	.5	11.		

3. Foreman 1. Operator-Not Owner 2. Operator and Owner

3. Foreman 5. Tobacco Producer 7. Other Crop Producer 4. Livestock Herdsman 6. Agricultural Mechanics 8. General Farm Work Only

M-Mean of the Relative Importance Indeces of the occupation in each competency



# RELATIVE IMPORTANCE INDEX OF COMPETENCIES IN SOIL AND SOIL MANAGEMENT FOR EACH OCCUPATION

COMPETENCIES - Knowledge, Skills, and Tools Used	RELATIVE IMPORTANCE INDEX										
	Occupations-See Footnotes										
KNOWLEDGE SOIL AND SOIL MANAGEMENT	1	2	3	4	_5	6	7	-8			
173. Importance of Soils	1.8	1.8	1.6	1.0	1.7	1.0	1.3	1.6	1.47		
174. Soil Science	1.3	1.5	1.2	.9	1.1	1.0	1.0	1.6	1.20		
175. Preparing for Plants or Seeds	1.9	1.8	1.7	.9	2.0	1.0	1.8	1.8	1.61		
176. Cultivation Practices	1.9	1.8	1.7	9	2.0	2.0	2.0	1.8			
177. Liming & Fertilizing	1.9	1.9	1.8	1.0	2.0	2.0	2.0	1.8			
178. Using Manures	1.6	1.7	1.6	1.0	1.9		1.8	1.6			
179. Soil Water Management	1.7	1.8	1.5	.9_	1.6		1.3	1.6			
180. Controlling Erosion	1.8	1.8	1.5_	.6	1.6	1.0	1.3	1.0			
181. Adequate Drainage	1.8	1.7	1.4	1.0	1.5	1.0	1.3		1.07		
182. Irrigating	.7	1.0	1.0	1.0_	1.1	1.0	1.3		1.29		
183. General Farm Soil Management	.7	1.8	1.6	1.1	1.3	1.0	1.5	1.0			
SKILL SOIL AND SOIL MANAGEMENT		-		-	1.6	1.0	1.0	1.4	1.26		
184. Identify Soil Characteristics	1.5	1.4	1.6	1.0	1.6	.0	2.0	1.1	1.32		
185. Take Soil Samples	1.7	.9	.9	1.5	.9	.0	1.0	1.5	.94		
186. Test Soil and Interpret Results	1.9	1.8	1.8	1.1	1.9	.0	2.0	1.7	1.52		
187. Prepare Seedbed	1.9	1.8	1.6	1.1	1.7	2.0	2.0	1.6	1.71		
188. Apply Lime, Fertilizers, & Manure	1.9	1.8	1.6	1.1	1.7	2.0	2.0	1.6	1.7		
189. Cultivate Effectively	1.8	1.8	1.7	.9	1.7	.0	1.5	1.7	1.39		
190. Control Erosion  191. Provide Adequate Drainage	1.7	1.7	1.5	.1	1.4	.0	1.3	1.5	1.1		
192. Irrigate	.5	.9_	. <u>9</u>	.8_	1.1	.0	1.3	1.4	.8		
TOOLS USED SOIL AND SOIL MANAGEMENT	<u>.  </u>	<u> </u>		<u> </u>	-	<del> </del>	-		ļ		
193. Soil Testing Equipment	.6	.8_	.9	.5	.5_	.0	.8	1.5			
194. Soil Preparing and Cultivating Tools	1.8	1.7	1.6	1.3	1.7	.0	2.0	1.7	Г		
195. Drainage Tools	1.4	1:2	1.2	1.0	1.3	.0	1.3	1.5			
196. Irrigating Tools	.6	.7	.9	.8	9	0.	1.3	1	Ι		
197. Soil Sampling Tools	1.5	1.3	1.3	1.1	1.1	.0	1.8	1.4	1.1		

<sup>1.</sup> Operator-Not Owner
2. Operator and Owner

. M-Mean of the Relative Importance Indeces of the occupation in each competency



<sup>3.</sup> Foreman 5. Tobacco Producer 7. Other Crop Producer 4. Livestock Herdsman 6. Agricultural Mechanics 8. General Farm Work Only

### THE RANK OF SUBJECT MATTER AREAS TO JOB TITLES

JOB TITLE		RANK	AREAS AREAS	INDEX
			AGRICULTURAL MECHANICS	1,78
	Ñ	2	SOII AND SOIL MANAGE, FMT	1,49
		3	ANTINAL SCIENCE	1,66
	Ę	4	FARM BUSINESS MANAGEMENT AND MARKSTING	1.81
OPERATOR	KZO3-JWDGE	5	FARMSTEAD BUILDINGS, FENCES, AND WATER SYSTEM	1,99
AND	1	6	PLANT SCIENCE	,
OWNER	XXXXXX	<u>(XXXXXX</u>	<u> </u>	XXXXXXXX
	S		AGRICULTURAL MECHANICA	3.45
	κ	2	FARMSTRAD, BUILDINGS, PENCIS, AND WATER SYSTEM	1.59
	- 11	3	TARM BUSINESS MANAGEMENT AND MARKETING	1.88
	L	4	SOIL AND SOIL MANAGEMENT	1.53
	L	5	PLANT SCIENCE	1.49
	s	6	ANTWAL SCIENCE	1 22

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	Ī.,	i	AGRICULTURAL MECHANICE	1,77	
	N	2_	SOIL AND SOIL MANAGINGERS	2.62	
	l ₩	3	FARM BUSINESS MANAGEMENT AND MARKETING	1,95	
	E	4	PLANT SCIENCE	1.54	
	KZOZ JEDGE	5	PARMSTRAD, BUILDINGS, PENCES, AND WATER SYSTEM	1.50	
OPERATOR	1	6	AWIMAL SCIENCE	1.22	
MOZE X	<u>XXXXX</u>	<u>XXXXXX</u>	<u> </u>	XXXXXXX	
OWNER	s		AGRICULTURAL MINCHANICS	1.72	
V-1.02-	K	1 1	2	FARM BUSINESS MANAGEMENT AND MARKETING	3.54
	1	3	SOIL AND SOIL MANAGEMENT	1,52	
	L	4	PARMSTRAD, BUILDINGS, FENCES, AND WATER SYSTEM	1.51	
	L	5_	PLANT SCIENCE	1.44	
	s	6	ANIMAL SCIENCE	1.13	

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		1	AGRICULTURAL NECESARIOS	1.63
	Ñ	2	SOIL AND SOIL MANAGEMENT	1.50
	W	3	PARMSTRAD, BUILDINGS, PENCES, AND WATER SYSTEMS	1,32
	KZOX-JEDGE	4	PARM BUSTNESS MANAGEMENT AND MARKETENG	1.31
	Ğ	5	PLANT SCIENCE	1.29
PORTHAM XXXX	-	446 446 446 446 446 446 446 446 446 446	ANTMAL SCIENCE	1.25
	s	1	AGRICULTURAL MECHANICS	1,49
	K	2	BOTT, AND SOTT, MANAGEMENT	1.45
	1	3	PARMETRAD, BUILDINGS, PENCES, AND WATER SYSTEM	1.41
	L	4	PARK BUSINESS MANAGEMENT AND MARKETING	1.26
	L	5	PLANT SCIENCE	1,23
	s	6	ANIMAL SCIENCE	1.04

JOB TITLE		RANK	AREAS MATTEP	INDEX
	ķ		AKTYAI, SCIENCE	1.43
	Ñ	2	AGRICULTURAL MECHANICS	11.11
LIVESTOCK XXX	₩ W	3	PARMSTEAD, BUILDINGS, FENCES, AND WATER SYSTEM	1,07
	KZOXLEDGE	4	PARM BUSINESS MANAGEMENT AND MARKETING	1,05
	G	5	SOIL AND SOIL MANAGEMENT	.88
	1 -	6	PLANT SCIENCE	.76
	XXXXXX	TXXXXXX	<u> </u>	<u> </u>
	s	. 1	ANIMAL SCIENCE	1,34
	K	2	FARMSTRAD, BUILDINGS, FENCES, AND WATER SYSTEM	1.25
	1	_3	SOIL AND SOIL MANAGINGENT	. 92
	L	4	PARM BUSINESS MANAGEMENT AND MARKETING	.91
	L	5	AGRICULTURAL MECHANICS	.89
	19	6	MANY SCIENCE	.72

## THE RANK OF SUBJECT MATTER AREAS TO JDB TITLES-- (CONTINUED)

JOB TITLE		RANK	SUBJECT MATTER AREAS	INDEX
			ATRICULTURAL MECHANICS	1,69
	I K I N	2	SOIL AND SOIL MANAGEMENT	1.65
	<b>ドアのダーボウのド</b>	3	PLANT SCIENCE	1.80
	Ë	4	PARMSTRAD, BUILDINGS, PENCES, AND WATER SYSTEM	1.26
į	D	5	FARM BUSINESS MANAGEMENT AND MARKETING	1.09
TOBACCO	Ĕ	6	ANIMAL SCIENCE	.75
PRODUCER XXXXXX	<del>ĊXXXXXX</del>	ANIMAL SCIENCE	XXXXXXXX	
	s		SOIL AND SOIL NAVAGENDET	1.82
	K	2	AGRICULTURAL MECHANICS	1.39
	lı.	3	FARMSTEAD, BUILDINGS, FENCES, AND WATER SYSTEM	1.39
	$\mathbf{l}_{\mathbf{l}}$	4	PLANT SCIENCE	1,33
		5	FARM BUSINESS MANAGEMENT AND MARKETING	1.03
	s	6	ANIMAL SCIENCE	.65

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		1	AGRICULTURAL MICHANICS	1.67
	l N	2	PARASTRAD, BUILDINGS, PRICES, AND WATER STOTES	1,33
	MDGMLK02X	3	SOIL AND SOIL MANAGEMENT	1,18
	Ę	4	ANTHAL SCIENCE	1.04
	Ğ	5	PARM BUSINESS MANAGEMENT AND MARKETING	.40
AGRICULTURAL	E	6	MANT SCIENCE	.07
MECHANICS	X <u>XXXX</u>	XXXXXX	<u> </u>	*****
	s		A TOULTURAL MICHANICS	1,89
	ĸ	2	FARL STEAD, BUILDINGS, . FENCES, AND WATER SYSTEM	1.71
	1	. 3	PLANT SCIENCE	1.13
	L	4	ANTMAL SCIENCE	1.07
}	lı	5_	SOIL AND SOIL MANAGEMENT	.33
	s	6	FARM BUSINESS MANAGEMENT AND MARKETING	

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		1	AGRICULTURAL MECHANICS	1.41
	I K	2	PLANT SCIENCE	1,48
	KZOW.	3	SOIL AND SOIL MANAGEMENT	1,45
		4	FARMSTEAD, BUILDINGS, FENCES, AND WATER SYSTEM	,92
	THO GH	5	FARM BUSINESS MANAGEMENT AND MARKETING	.90
OTHER	1 -	6	ANIMAL SCIENCE	.44
свор ХУ	(XXX)	XXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXX
PRODUCER	s		AGRICULTURAL MECHANICS	1.81
}	K	2	SOIL AND SOIL MANAGEMENT	1,56
	1	3	PLANT SCIENCE	1.48
· ·	L	4	PARM BUSINESS MANAGEMENT AND MARKETING	1.33
·	1	5	PARKSTEAD, SUILDINGS, PENCES, AND WATER SYSTEM	1.11
1		6	ARIMAL SCIENCE	.38

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			SOIL AND SOIL MANAGEMENT	1,85				
	K	2	PARMSTEAD, BUILDINGS, PENCER, AND WATHER SYSTEM					
	W	3	PLANT SCIENCE	.97				
	MDOM-KOZX	4	AGRICULTURAL MECHANICS	97				
	D	5	AWTHAL SCIENCE	87				
GENERAL	. –	. –	. –			6	FARM BUSINESS MARAGINERY AND MARKETING	
PARM X	<u>(XXXX</u>	XXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXX				
WORKER	s		SOIL AND SOIL MANAGEMENT	1,48				
	ĸ	2	PLANT SCIENCE	1,12				
	1.	3	FARMSTRAD, BUILDINGS, FENCES, AND VATER SYSTEM	1,06				
	L	4	AGRICULTURAL MECHANICS	.87				
	1	5	ANTHAL SCIENCE	.85				
	s	6	PAGE BUSINESS MANAGEMENT AND MARKETING	,69				

